

CULTURALLY-SPECIFIC FACTORS ASSOCIATED WITH EATING DISORDER PATHOLOGY, TREATMENT, AND IDENTIFICATION AMONG LATINAS

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ABSTRACT

Mary K. Higgins Neyland: Culturally-Specific Factors Associated with Eating Disorder Pathology, Treatment, and Identification among Latinas
(Under the direction of Anna M. Bardone-Cone)

Despite comparable prevalence of some eating disorders (e.g., binge eating disorder) among Latinas compared to Caucasians, eating disorders are still thought of as primarily afflicting Caucasian women. This has led to a dearth of research on eating disorders among racial/ethnic minorities. Latinas are less likely than Caucasian women to seek treatment for their eating disorder, and less is known about their treatment-seeking experiences. We recruited a female sample of 119 Latinas (78 who have suffered from binge eating disorder and/or bulimia nervosa, 41 who have never had an eating disorder), to examine two primary aims: 1) gather quantitative data on treatment experiences, their perceived helpfulness, and factors (including culturally relevant ones) associated with treatment experiences; and 2) test mechanistic models involving binge eating, disordered eating, body dissatisfaction, and culturally-specific factors. As a more exploratory aim, we compared those who reported a history of an eating disorder to those who denied a history of an eating disorder, despite both groups meeting full diagnostic criteria. Findings from this study can be used to inform treatments for Latinas in order to potentially increase effectiveness.

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CHAPTER 1: BACKGROUND INFORMATION

The relative lack of studies investigating eating pathology and treatment experiences among Latinas is particularly troubling in light of evidence that bulimia nervosa is more prevalent among Latinas compared to non-Latino Caucasians (Marques et al., 2011)¹. Furthermore, there were no differences in 12-month or lifetime anorexia nervosa and binge eating disorder prevalence when comparing Latinos and non-Latino Caucasians (Marques et al., 2011). Additional studies support similar prevalence of eating disorders amongst Latinos compared to Caucasians (Cachelin, Veisel, Barzegarnazari, & Striegel-Moore, 2000; Franko et al., 2012). Given these findings, one thing is evident: Latinas *do* suffer from eating disorders, and they have been largely overlooked in eating disorder research.

Furthermore, of those Latinas who suffer from eating disorders, evidence suggests that our current treatments and the health care system may not meet their needs. Latinos report experiencing stigma related to utilizing mental health services, as well as a distrust of health care providers, and fears of experiencing racism and cultural miscommunications (Pomales & Williams, 1989; Rastogi, Massey-Hastings, & Wieling, 2012). These findings point to a need to uncover relevant cultural factors that could be targeted to increase treatment efficacy for Latinas. These findings also underscore the importance of connecting Latinas with services that have proven efficacy in this population.

¹ We will refer to “Latinos” when discussing past research if the sample described consisted of both male and female Latinos. Our default in speaking about this population and our sample will be “Latinas,” due to the scope of our research. Lastly, when we refer to Caucasians, we will be referring to non-Latino Caucasians.

Due to the fact that Latinos may experience eating disorders at similar or elevated rates relative to Caucasians, that the experience of eating disorder treatment and the efficacy of our traditional eating disorder treatments is largely unknown in Latinos, and that there is lack of research investigating pathways to disordered eating in this population, research needs to be done to 1) gather quantitative data on treatment experiences, their perceived helpfulness, and factors (including culturally relevant ones) associated with treatment experiences; and 2) test mechanistic models involving binge eating, disordered eating, body dissatisfaction, and culturally-specific factors. We also compared those who reported a history of an eating disorder to those who denied a history of an eating disorder, despite both groups meeting full diagnostic criteria, on a number of factors including eating disorder severity and mental health treatment stigma tolerance.

Thus, the primary purpose of this study is to investigate treatment experiences and pathways to disordered eating among Latinas living in the United States of America (U.S.) who have had a history of binge eating disorder and/or bulimia nervosa. We are especially interested in culturally-specific factors that may be uniquely related to eating pathology and treatment for these women. By culturally-specific factors we are referring to factors that may play a unique role in eating pathology for Latinas—either positively by aiding in eventual recovery or negatively by maintaining the eating disorder or leading to relapse. By targeting these culturally-specific factors during treatment, there is the potential to increase recovery rates and reduce relapse for Latinas who suffer from eating disorders.

Culturally-Specific Factors Associated with Eating Pathology

Figure 1 displays culturally-specific factors from the individual, family, and environmental levels that we conceptualize may impact eating pathology (this model was

adapted from Reyes-Rodríguez, Ramírez, Davis, Patrice, & Bulik, 2013). We will elaborate on a subset of these below as a way of providing a sense of the constructs that researchers interested in examining eating disorders and disordered eating in Latina populations may want to consider. We will revisit these constructs when discussing our specific aims. Our culturally-specific factors were assembled based on the literature related to risk factors, treatment, and presentation of eating disorder symptoms among Latinas and are not exhaustive.

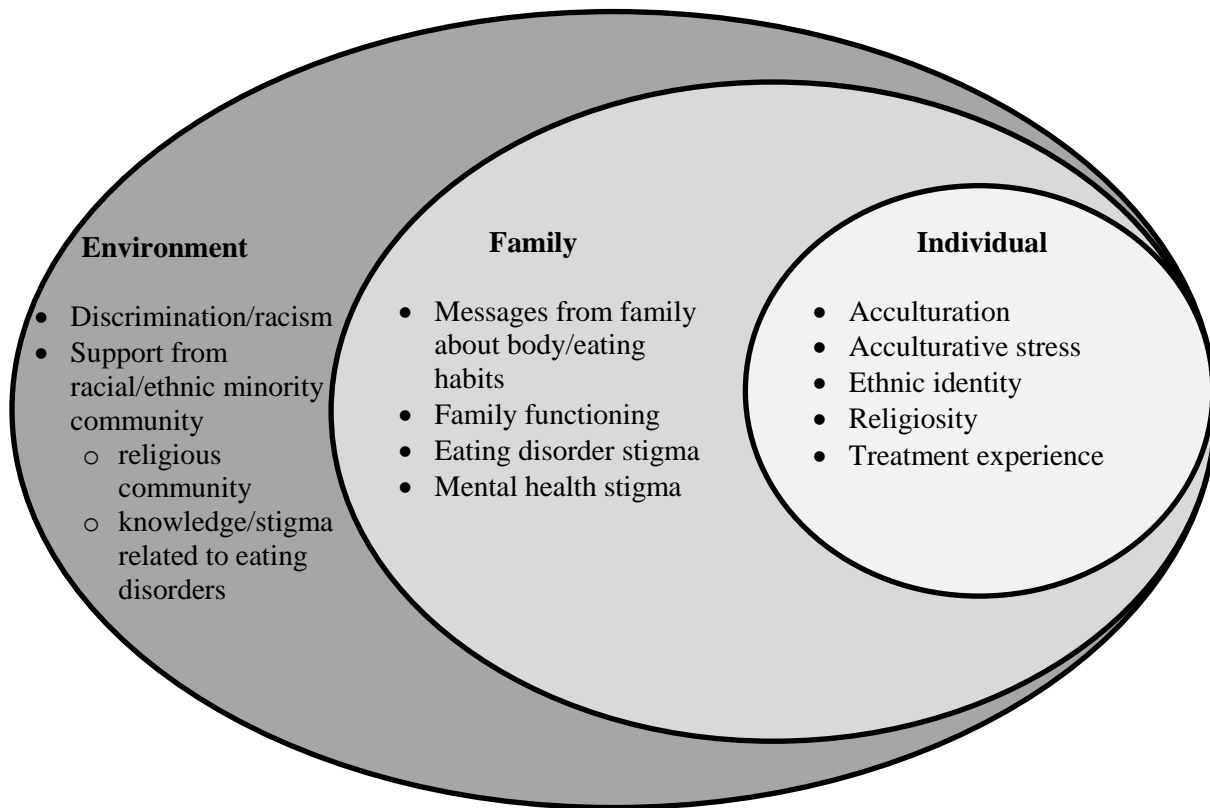


Figure 1. Factors, with a focus on culturally-specific factors, which may be associated with eating pathology for Latinas at the individual, family, and environmental levels, adapted from Reyes-Rodríguez et al., 2013.

Before proceeding with a discussion of culturally-specific factors that may be associated with treatment and eating pathology, we would like to acknowledge that in broadly defining Latinas, much inter-group variance is lost; for instance, referring to “Latinas” does not capture all of the experiences of Mexican-Americans, Bolivian-Americans, or Ecuadorian-Americans.

However, by referring to this ethnicity, we are capitalizing on the broad characteristics, values, worldviews, and experiences Latinas may share, along with common physical characteristics (Okazaki & Sue, 1995). Thus, it is important to keep the culturally-specific factors discussed below in mind when working with Latina clients, but to also acknowledge that not all factors will be personally relevant to all clients.

Individual factors. There are a variety of factors especially relevant to the Latina individual suffering from an eating disorder that could impact risk, maintenance, and treatment of her eating disorder. We discuss these factors below.

Acculturation. The process of aligning with a new culture is known as acculturation and is marked by psychosocial change occurring when an individual acquires cultural values, language, and norms of the dominant society. Current acculturation theory characterizes this process as occurring along two dimensions: the degree to which the individual maintains cultural beliefs and practices of his/her country of origin, and the degree to which the individual adopts similar aspects of the new dominant culture (Ayala, Mickens, Galindo, & Elder, 2007). To the extent that eating disorders can be thought of as “culture-bound” within the U.S., it makes sense that the more a person aligns and identifies with U.S. culture (which centers on the thin-ideal), the more at risk she may be for developing body dissatisfaction and eating disorders (Ayala et al., 2007). Since previous studies have found that undergraduate Latinas endorse larger body shape ideals for their ethnic group when compared to Caucasian undergraduates (e.g. Gordon, Castro, Sitnikov, & Holm-Denoma, 2010), it follows conceptually that Latinas who adhere more closely to their culture of origin may be operating under larger body expectations than those who affiliate more with Caucasian majority culture. Less acculturated women may be at a lower risk of engaging in disordered eating practices (Osvold & Sadowsky, 1993; Root, 1990), whereas

more acculturated Latinas may instead strive for very thin physical Caucasian ideals that might be unrealistic given their physical characteristics or body proportions (Kempa & Thomas, 2000).

Supporting this theory, level of acculturation has been associated with eating disorder symptoms among Latinas (Alegria et al., 2007; Cachelin, Phinney, Schug, & Striegel-Moore, 2006). Indeed, Latina women who had eating disorders were more likely to only speak English and to have parents born in the U.S. (i.e., more acculturated) than a matched non-eating disordered control group, supporting the association between acculturation and disordered eating in a clinical sample (Cachelin et al., 2000). Furthermore, level of acculturation was found to be associated with partial syndrome eating disorders among Latinos, with those who were more acculturated being more likely to be diagnosed compared to those who were less acculturated (Gowen, Hayward, Killen, Robinson, & Taylor, 1999).

Thus, lower levels of acculturation may be a buffer against eating disorder symptoms—those who are able to separate themselves from Western culture, which places a large emphasis on the thin-ideal, may also be able to distinguish themselves from the White, majority women they see in the media. In contrast, high levels of acculturation appear to connote risk. Thus, Latinas who are highly acculturated and suffering from an eating disorder may be striving for the thin-ideal and may be more resistant to eating disorder recovery as a result.

Acculturative stress. Instead of level of acculturation affecting eating disorder pathology, some researchers postulate that acculturative stress serves as a more potent risk factor for eating disorders (Gordon et al., 2010; Reddy & Crowther, 2007). Acculturative stress is defined as the stress and reduction in health status that one experiences while undergoing the process of acculturation/adaptation to a new culture (Berry, 1970, 1997; Berry, Kim, Minde, & Mok, 1987). This clash between one's traditional culture and the majority culture has been implicated in the

emergence of eating disorders (Smolak & Striegel-Moore, 2001) and has been linked to a number of unhealthy psychological outcomes among Latinas, including bulimic symptoms (Perez, Voelz, Pettit, & Joiner, 2002) and drive for thinness (Gordon et al., 2010).

Among a sample of African Americans and Latinas, body dissatisfaction interacted with acculturative stress to identify women with the highest levels of bulimic symptomatology (Perez et al., 2002). Thus, it appears that minority women with body dissatisfaction may engage in bulimic behaviors if they are also experiencing acculturative stress. When investigating acculturative stress among African Americans, Asian Americans, and Latinas, acculturative stress was significantly associated with bulimic symptoms when controlling for general life stress, highlighting the impact of acculturative stress in the manifestation of bulimic symptoms over and above general stress (Kroon Van Diest, Tartakovsky, Stachon, Pettit, & Perez, 2013). Acculturative stress could act on eating pathology in two ways: women may restrict in order to achieve some control, or they may binge eat as an escape from the overwhelming stress of acculturation.

As stated previously, acculturative stress may be a more potent factor in eating disorder symptoms than acculturation. To support this point, higher levels of acculturative stress were associated with a higher drive for thinness among Latinas; however, level of acculturation was not similarly associated with this construct (Gordon et al., 2010). This finding provides evidence that it is the *stress* of acculturating, rather than acculturation itself, which may be detrimental. Thus, women who experience a high degree of acculturative stress may be coping with this stress in maladaptive ways (e.g., eating pathology). It follows that for these women, targeting acculturative stress in treatment (and finding alternative ways to effectively cope) could lead to more successful eating disorder recovery and reduced risk for relapse once recovered.

Family factors. Family factors are not unique to Latinas; however, due to the strong emphasis that Latinas place on family relationships, we argue that they are potent factors in both eating disorder risk and resilience and should be included in a discussion of eating disorder pathology among Latinas. Indeed, a strong extended family network has been observed among Latinos (Kempa & Thomas, 2000; Steidel & Contreras, 2003). Latinos embrace familism, which is considered a core value that encompasses upholding the honor of one's name, interdependence, support, and submissiveness in regards to family (Steidel & Contreras, 2003). These traditions of strong family support could bolster Latinas in treatment and recovery, and may dovetail nicely with Family-Based Treatment, found to be significantly more effective than individual therapy in treating anorexia nervosa and bulimia nervosa in adolescents (Couturier, Kimber, & Szatmari, 2013). Although family support may enhance treatment and recovery, there are also aspects of family that may increase risk for an eating disorder and serve as maintenance factors for eating pathology.

Family functioning. Although strong family connections are likely protective against eating pathology for Latinas, research suggests that family disconnection is a risk factor. Regarding adolescent Latinas, the relationship between family connectivity and bulimic symptomatology was mediated by dysphoria; thus, feeling disconnected from family led to depressed mood and suicidal ideation, which then led to bulimic behaviors (Hodson, Newcomb, Locke, & Goodyear, 2006).

Additionally underscoring the importance of family in relation to eating pathology, the effects of family functioning on disordered eating have been seen across ethnic groups: in an adolescent sample of Caucasians, Asian Americans, and Latinas, chronic/regular dieters had significantly poorer family functioning than those who did not diet (Cachelin, Weiss, &

Garbanati, 2003). Family disconnection is problematic in relation to eating disorders because it could serve to maintain eating pathology or facilitate relapse; if one is treated for an eating disorder but is still exposed to a hostile or conflictual family environment, she may be more likely to maintain (or revert back to) eating disorder behaviors for emotion regulation.

Environmental factors. There are factors related to one's broader environment that could increase the amount of stress to which a Latina with an eating disorder is exposed. We will focus on discrimination related to ethnicity, elaborated on below.

Discrimination. The stress and trauma related to discrimination serve as maintenance factors in eating disorders among racial/ethnic minorities (e.g., African Americans; Harrington, Crowther, Payne Henrickson, & Mickelson, 2006). The escape theory of binge eating (Heatherton & Baumeister, 1991) could explain the relationship between discrimination and eating pathology. Escape theory states that people engage in binge eating as a means of lowering their self-awareness related to the pressures, threats, long-range concerns and lasting consequences of their experiences. These pressures typically arise from standards that are set forth by the self or by a salient reference group and are demanding of the individual. Thus, discrimination by the reference group (i.e., majority culture) could remind the minority member of the ways in which she does not comply with Caucasian majority culture and standards (e.g., through skin tone, body type, language). In response to these stressors and perceived shortcomings, the minority member may seek to reduce her self-awareness of the experience and her deviation from the majority, and engage in binge eating as a result. Binge eating is then maintained through negative reinforcement: the binge episode provides a "zoning out" and escape experience from one's discrimination-generated negative affect.

Discrimination leads to negative affect among Latinos. An ecological momentary assessment study found that Latinos experienced depression the day following a discriminatory event (Torres & Ong, 2010). As depression has been found to precede disordered eating in both subclinical (Dennard & Richards, 2013) and clinical populations (Deep, Nagy, Weltzin, Rao, & Kaye, 1995), the relationship between discrimination and depression is important to keep in mind: perhaps discrimination leads to depression which then leads to eating pathology via escape theory. Eating pathology may then be maintained through negative reinforcement. Although research supports the link between binge eating and discrimination among a sample of African American women (Harrington et al., 2006), these constructs have not been investigated among Latinas. Further supporting the link between discrimination and eating pathology among racial/ethnic minorities, focus group data suggested that eating pathology for racial/ethnic minority women has “little or nothing to do with vanity or obsession with appearance. In fact, eating problems begin as survival strategies—as sensible acts of self-preservation, in response to myriad injustices including racism” (Thompson, 1996; p. 106); from this perspective, eating disorders may begin as coping strategies in response to external stressors (e.g., racism and discrimination). If racism and discrimination are indeed maintenance factors for eating pathology, exposure to these experiences would impede eventual recovery.

Culturally-Specific Factors Hypothesized to be Associated with Treatment Utilization

Less than 9% of Latinos born in the U.S. seek mental health care treatment, and Latinos have less availability, accessibility, and utilization of mental health care services when compared to Caucasians (U.S. Department of Health and Human Services, 2001; Vega, Kolody, Aguilar-Gaxiola, & Catalano, 1999). Furthermore, although racial/ethnic minority college students experience more distress than Caucasians, they attend significantly fewer therapy sessions

(Kearney, Draper, & Barón, 2005). In regards to eating disorders specifically, one study found that between 67%-83% of racial/ethnic minorities with a diagnosed eating disorder do not seek treatment (Hart, Granillo, Jorm, & Paxton, 2011). This is contrasted with another study in which 24.2% of Caucasian participants with a diagnosed eating disorder did not seek treatment (Marques et al., 2011). There are a variety of factors related to the individual, mental health care providers, and the mental health care system that influence whether Latinas suffering from an eating disorder seek or receive treatment. These factors may affect eventual recovery, especially in light of the low incidence of spontaneous remission from an eating disorder (Mills, Polivy, McFarlane, & Crosby, 2012). We expound on these factors below.

Acculturation. Research consistently identifies acculturation as a factor that determines whether Latinos seek treatment: less acculturated Latinas (measured by being bilingual, foreign-born, and having foreign-born parents) who were diagnosed with eating disorders via the Eating Disorder Examination were less likely to seek and receive treatment for their eating disorder symptoms in the past year, when compared to those who were more acculturated (Cachelin et al., 2000).

Acculturation may be linked to an unwillingness to seek mental health care: those who are less acculturated are more likely to be distrustful of health care providers, have a preference for counselors of the same ethnicity, and be less likely to see the utility in mental health care (Coleman, Wampold, & Casali, 1995; Obasi, & Leong, 2009; Pomales & Williams, 1989). As such, those who are less acculturated may suffer from eating disorders less, but of those who do suffer from eating disorders, less acculturated women may be less likely to seek treatment and thus less likely to recover.

Stigma and shame related to eating disorders. Stigma and shame from family members regarding eating disorders also influence whether or not Latinas seek treatment. Fear of bringing

shame to oneself or one's family or "losing face" (characteristics of Latin cultures) could deter Latinas from seeking treatment for an eating disorder (Cachelin, Rebeck, Veisel, & Striegel-Moore, 2001; Steidel & Contreras, 2003). Indeed, feelings of shame and fear of discrimination were among the top reasons a sample of ethnically diverse women gave as barriers to treatment (Cachelin et al., 2001). If Latinas do not seek treatment due to stigma and/or shame, they may be less likely to recover from their eating disorder.

Clinician bias. Eating disorders are less likely to be detected in Latinas. For example, among an ethnically and racially diverse sample with eating concerns, Latinas were less likely to be referred for further evaluation when compared to Caucasians; this effect was found even after controlling for severity of eating disorder symptoms, cognitive symptoms, behavioral symptoms, distress and impairment, and BMI (Becker, Franko, Speck, & Herzog, 2003). Additionally, Latinas who reported eating and weight concerns were significantly less likely to be asked about eating pathology by a doctor. These findings indicate that clinician bias can cause a disparity in access to treatment among Latinas with eating disorders (Becker et al., 2003).

Cost of services. Aside from clinician bias, there also may be financial aspects that play a role in whether or not Latinas receive treatment for an eating disorder (U.S. Department of Health and Human Services, 2001). Although not a culturally-specific factor, Latino youth hospitalized with an eating disorder were less likely to have private insurance (Calderon, Vander Stoep, Collett, Garrison, & Toth, 2007). Additionally, the top reported reason women in a racially and ethnically diverse sample did not seek treatment for their eating disorder was a lack of insurance and financial difficulties (Cachelin et al., 2001). Consequently, issues related to insurance or financial status may have a large impact on whether or not clients seek and/or receive treatment.

Language barriers. Language barriers may also impede access to treatment. Among Latinas who are suffering from an eating disorder, not being able to speak or read English well could limit the amount of information they receive about health care services. Additionally, working with a health care provider who is not bilingual may prove to be embarrassing or complicated when interpreters are utilized; interpreters at times may translate symptoms incorrectly or add in their own advice, along with that of the provider (Reyes-Rodríguez et al., 2013). For many clients for whom English is not their primary language, engaging in therapeutic treatment in English could be very difficult, especially if the client feels as though she is not able to fully express her thoughts and feelings (Reyes-Rodríguez et al., 2013). Thus, language barriers may dissuade one from seeking or remaining in treatment.

Mechanistic Models Involving Binge Eating, Disordered Eating, Body Dissatisfaction, and Culturally-Specific Factors

One of our primary aims focuses on testing mechanistic models involving binge eating, disordered eating, body dissatisfaction and culturally-specific factors; we elaborate here on the specific models to be tested, providing the theory behind the proposed pathways. The first model (see Figure 2) reflects components of the escape theory of binge eating (Heatherton & Baumeister, 1991). According to escape theory, those who engage in binge eating (either in the context of bulimia nervosa or binge eating disorder) tend to have unrealistically high expectations for themselves, which often are difficult to achieve (Heatherton & Baumeister, 1991). When those who binge eat perceive that they have fallen short of these high expectations, they experience negative affect (Duval & Wicklund, 1972; Higgins, 1987) from which they wish to escape. Thus, escape theory states that individuals engage in binge eating as a means of lowering their self-awareness related to the pressures, threats, long-range concerns and lasting consequences of their experiences. Indeed, individuals who binge eat often do so because it lets

them “zone out” and escape from negative feelings, albeit temporarily (Blackburn, Johnston, Blampied, Popp, & Kallen, 2006; Heatherton & Baumeister, 1991). Thus, according to this theory, negative affect is proximal to binge eating. We plan to take a step back from escape theory to suggest some culturally-specific factors that might act as ego-threatening stressors that generate negative affect and thus explain how escape theory may apply to Latinas within a cultural context.

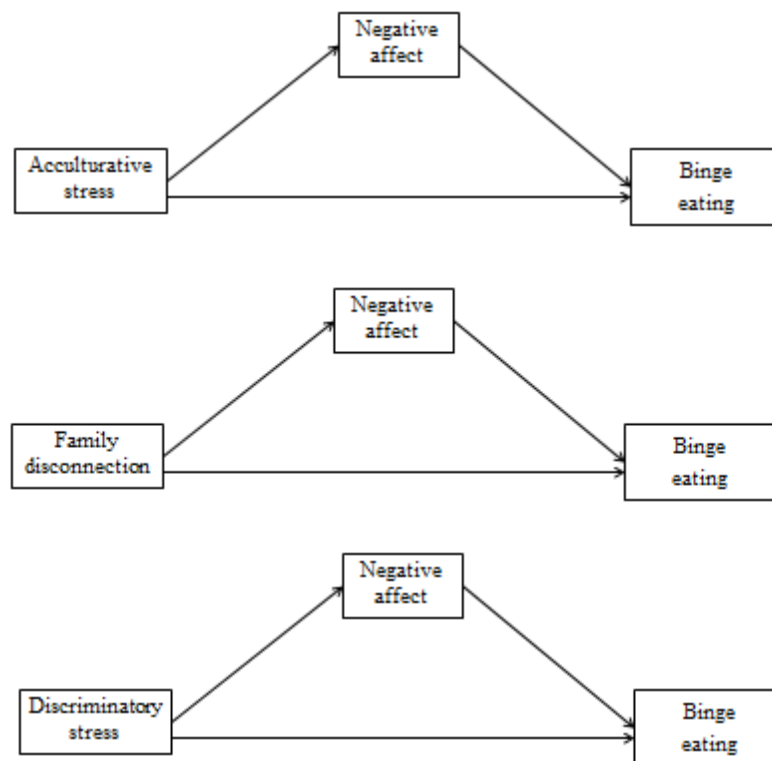


Figure 2. Proposed mediation models testing the escape theory of binge eating using acculturative stress, family disconnection, discriminatory stress, and negative affect.

We propose that stressful experiences across the three domains of interest (i.e., individual, family, environment) could remind one of the ways in which she does not comply with personal, familial, or cultural standards, and these experiences are likely to invoke a strong negative reaction (e.g., depression, anxiety; Heatherton & Baumeister, 1991). In response to the

negative reaction caused by these stressful experiences, one may seek to reduce her self-awareness of the experiences. This desire may motivate binge eating. We chose the independent variables of acculturative stress (individual level), family disconnection (family level), and discriminatory stress (environmental level). We tested these independent variables in separate mediation models in order to investigate total, direct, and indirect effects on binge eating and to examine which culturally relevant stressors may fit in an escape theory model.

We chose acculturative stress from the individual factors because experiencing high levels of acculturative stress would likely cause women to feel inadequate. This idea is reinforced by previous links between higher acculturative stress and lower self-esteem among Latinos (Zamboanga, Schwartz, Jarvis, & Van Tyne, 2009). It is unsurprising that numerous studies have found acculturative stress to be related to depression severity (e.g., Crockett et al., 2007; Driscoll & Torres, 2013; Torres, 2010), reinforcing the connection between experiencing acculturative stress and subsequent negative affect. Evidence supports a positive relationship between acculturative stress and bulimic symptomatology (Kroon Van Diest et al., 2013; Perez et al., 2002), suggesting the likelihood that there is a direct relationship between acculturative stress and binge eating within this mediation model.

We chose family disconnection as a stressor that might activate negative affect given the high value that Latinos place on family relationships. Due to the Latin culture expectations of familism, experiencing family disconnection for a Latina may directly oppose these cultural expectations. Thus, family disconnection or conflict would likely be experienced as a failure to meet cultural standards and in essence would function as an ego-threatening stress experience for Latinas. Indeed, in a longitudinal study, Latinos who reported high conflict with their parents had significantly lower self-esteem at baseline compared to Latinos who reported low conflict; over

two years, Latinos with high parental conflict consistently reported lower self-esteem than those with low conflict (Smokowski, Rose, & Bacallao, 2010). Furthermore, feeling disconnected from one's family led to depressed mood and suicidal ideation among Latinas (Hodson et al., 2006)—this again supports the inclusion of family disconnection in the model. Latinas who experience family disconnection may, as a consequence, feel depressed, and as a result, engage in binge eating to escape self-awareness of their negative affect. While no research to date has examined links between family disconnection and binge eating in Latina samples, research in other racial/ethnic groups supports such a pathway. For instance, family discord, frequent separations from parents, high parental demands, and a parental style categorized by low affection and high control served as risk factors for binge eating disorder among a sample of Caucasian and African American women (Striegel-Moore et al., 2005).

We also chose to investigate discriminatory stress as an ego-threatening stressor in the context of escape theory. As mentioned above, escape theory states that people engage in binge eating as a means of lowering their self-awareness related to the pressures, threats, long-range concerns and lasting consequences of their experiences. These pressures typically arise from standards that are set forth by the self or by a salient reference group and are demanding of the individual. Thus, discrimination by the reference group (i.e., majority culture) could remind the minority member of the ways in which she does not comply with Caucasian majority culture and standards (e.g., through skin tone, body type, language) and act as an ego-threatening stressor. In response to these stressors and perceived shortcomings, the minority member may seek to reduce her self-awareness of the experience and her deviation from the majority, and engage in binge eating as a result. Indeed, perceived ethnic discrimination predicted self-esteem growth longitudinally among adolescent Latinos, such that those who reported more ethnic

discrimination had lower self-esteem and a significantly slower growth in self-esteem over time (Zeiders, Umaña-Taylor, & Derlan, 2013). Furthermore, discrimination leads to negative affect among Latinos (Torres & Ong, 2010): an ecological momentary assessment study found that Latinos experienced depression the day following a discriminatory event (Torres & Ong, 2010), further supporting the role of discriminatory stress in a model of escape theory. Although there are no studies looking at the direct relationship between discriminatory stress and binge eating among Latinas, discriminatory stress was significantly related to binge eating symptomatology among a sample of African American women (Harrington et al., 2006).

The second set of models draws from the sociocultural models of eating disorders (see Figure 3). Sociocultural models of eating disorders (e.g., Dual Pathway Model - Stice, 1994; Stice, Nemeroff, & Shaw, 1996; Tripartite Influence Model - Thompson, Heinberg, Altabe, & Tantleff-Dunn, 1999) are among the most widely tested and validated models describing the development of body dissatisfaction and eating disorders among people in the U.S. These models posit that eating disorders are culture-bound (Smolak & Striegel-Moore, 2001), and that women receive outside pressure (from the media, peers, and family) to be thin; this pressure then causes women to internalize the thin ideal for themselves (Thompson & Stice, 2001). Internalizing the thin-ideal (e.g., “I want to be thin”) can lead them to realize that they do not meet the exceptionally thin standards set by the media and cause them to experience body dissatisfaction as a result (Thompson et al., 1999). In an attempt to reduce body dissatisfaction and comply with the thin-ideal, women turn to disordered eating (Stice, 2001).

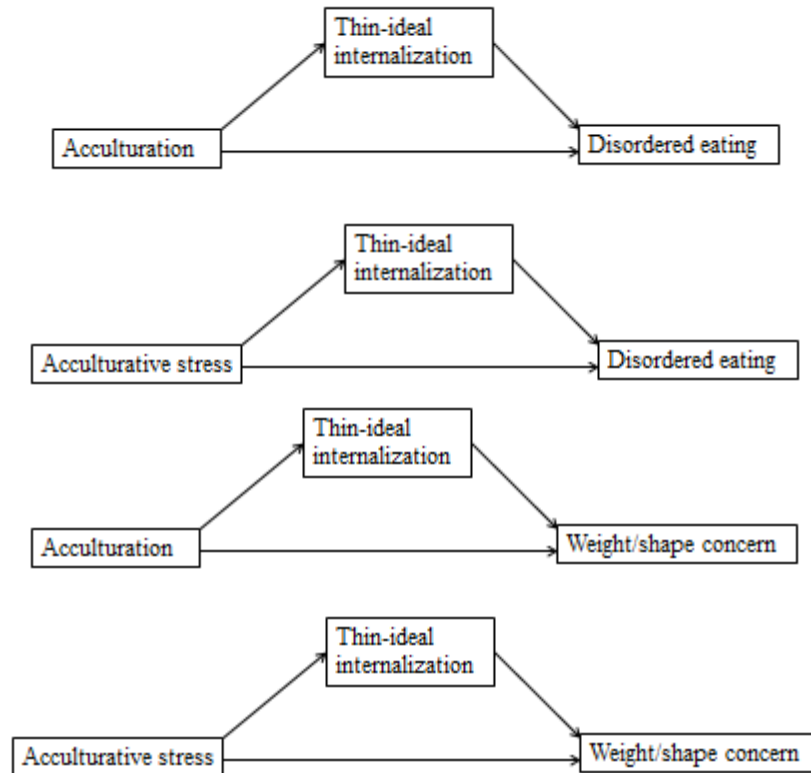


Figure 3. Proposed sociocultural mediation models testing acculturation and acculturative stress as independent variables, thin-ideal internalization as a mediator, and disordered eating and weight/shape concern as dependent variables.

We are focusing on the thin-ideal internalization aspect of the sociocultural model because we are interested in whether there are culturally-specific factors that cause the thin-ideal to be internalized by Latinas. That is, are there aspects of Latin culture in the U.S. that serve as risk factors that make one more susceptible to pressures to be thin and subsequent internalization of the thin ideal? We are interested in identifying these factors in the hopes of aiding prevention and intervention efforts. If we uncover potential predictors of thin-ideal internalization that are risk factors for intense Western pressures to be thin and subsequent thin-ideal internalization, these could be addressed and combatted in therapy with Latina clients who have eating disorder concerns.

We will be testing two different independent variables that we suspect are associated with disordered eating and weight/shape concern via thin-ideal internalization: acculturation and acculturative stress. We are interested in these independent variables due to previous empirical support for their inclusion in sociocultural models of eating disorders among Latinas (e.g., Menon & Harter, 2012; Poloskov & Tracey, 2013). We are also interested in examining both acculturation and acculturative stress given inconsistent findings regarding which construct is more potent in predicting disordered eating and body dissatisfaction (Gordon et al., 2010; Reddy & Crowther, 2007). We will examine total, direct, and indirect effects, as well as total variance accounted for in the respective dependent variables (i.e., disordered eating, body dissatisfaction) in order to identify the effectiveness of each independent variable as a culturally-specific risk factor for Latinas. In total, we will test four models: acculturation in the thin-ideal internalization/disordered eating and thin-ideal internalization/body dissatisfaction mediation models and acculturative stress in the thin-ideal internalization/disordered eating and thin-ideal internalization/body dissatisfaction mediation models.

When focusing on the thin-ideal internalization/disordered eating and thin-ideal internalization/body dissatisfaction relations of the sociocultural model, it is important to provide support for these links among Latino samples. Indeed, as in the literature focused primarily on Caucasians, there are significant associations between thin-ideal internalization and disordered eating among Latinos, such that the more one has internalized the thin ideal, the more she engages in disordered eating (Austin & Smith, 2008; Warren, Schoen, & Schafer, 2010). Furthermore, there are significant positive associations between thin-ideal internalization and body dissatisfaction among Latinas (Austin & Smith, 2008, Poloskov & Tracey, 2013; Warren, Gleaves, Cepeda-Benito, del Carmen Fernandez, & Rodriguez-Ruiz, 2005).

The first independent variable we propose testing is acculturation. Since undergraduate Latinas endorse larger body shape ideals when compared to Caucasian undergraduates (e.g. Gordon et al., 2010), it follows conceptually that Latinas who adhere more closely to their culture of origin may be operating under larger body expectations than those who affiliate more with Caucasian majority culture. These less acculturated women could therefore be at a lower risk of engaging in disordered eating practices, while more acculturated Latinas may instead strive for very thin physical Caucasian ideals as they adopt U.S. conceptions of beauty and thinness (Alegria et al., 2007; Chamorro & Flores-Ortiz, 2000). We believe that higher acculturation leads to more thin-ideal internalization; this hypothesis is supported by prior work (Poloskov & Tracey, 2013), as well as the fact that Mexican Americans who are more acculturated to U.S. culture prefer thinner body types (Cachelin, Monreal, & Juarez, 2006; Olvera, Suminski, & Power, 2005).

Previous work additionally supports the direct relationships between acculturation and disordered eating and acculturation and body dissatisfaction among Latinas. Higher acculturation is associated with more disordered eating (Alegria et al., 2007; Cachelin et al., 2006; Chamorro & Flores-Ortiz, 2000; Gowen et al., 1999) as well as more body dissatisfaction (Lopez, Blix, & Blix, 1995; Pepper & Ruiz, 2007; Poloskov & Tracey, 2013).

The second independent variable we propose testing is acculturative stress. As mentioned previously, acculturative stress is conceptualized as the clash between one's traditional culture and the majority culture. Thin-ideal internalization mediated the relationship between acculturative stress and body image disturbance among a sample of undergraduate Latinos (Menon & Harter, 2012), suggesting that the pressure to acculturate may cause one to internalize the thin ideal and other majority culture messages as she progresses towards assimilation.

Acculturative stress has been implicated in the emergence of eating disorders (Smolak & Striegel-Moore, 2001) and has been linked to a number of unhealthy psychological outcomes, including bulimic symptoms (Perez et al., 2002). Interestingly, higher acculturative stress was associated with drive for thinness among Latinas, while acculturation was not; the authors conceptualized this as “maladaptive coping strategies that are used in an attempt to fit into the mainstream through attainment of the thin ideal” (Gordon et al., 2010, p. 141). While there is evidence that acculturative stress is directly associated with disordered eating among Latinas (Gordon et al., 2010; Kroon Van Diest, Tartakovsky, Stachon, Pettit, & Perez, 2014; Perez et al., 2002), previous work has not found a significant link between acculturative stress and body dissatisfaction. However, among a sample of African Americans and Latinas, body dissatisfaction interacted with acculturative stress to identify women with the highest levels of bulimic symptomatology (Perez et al., 2002), indicating the interrelatedness of these variables.

Thus, there are two culturally-specific factors that may confer risk related to internalization of the thin ideal and subsequent disordered eating and body dissatisfaction among Latinas. These factors (i.e., acculturation, acculturative stress) are similar in that they encompass aspects of identifying with U.S. culture – a culture that is characterized by an “epidemic of thinness.” Perhaps if Latinas identify more strongly with their native culture (which has been found to be more accepting of larger body types and to emphasize physically healthy bodies over those that are very thin – Franko et al., 2012; Gordon et al., 2010), they will be less likely to “buy in” to the thin ideal, despite pressure to conform. We plan to test these mediation models in an attempt to identify those culturally-specific factors that operate in a sociocultural model for Latinas.

Factors that may Differentiate Those who Endorsed Having an Eating Disorder Versus Those who did not, Despite Both Groups Meeting Full Diagnostic Criteria for an Eating Disorder

In analyzing the characteristics of our sample, two subgroups emerged: those who endorsed having had a history of an eating disorder and who met full diagnostic criteria for an eating disorder and those who endorsed never having had a history of an eating disorder but met full criteria for an eating disorder either in the present or in the past. Due to these two distinct subgroups, we investigated whether they differed on important characteristics.

As mentioned above, previous studies have examined the stigma related to and lack of knowledge about eating disorders among the Latin community (Reyes-Rodríguez et al., 2013). This unfamiliarity and isolation in believing that one is the only Latina in the U.S. with an eating disorder could lead an individual to fear seeking treatment because she may be seen as especially aberrant. Relatedly, a fear of being labeled was present in an ethnically and racially diverse sample and prevented treatment seeking (Cachelin et al., 2001). Similar factors may also contribute to some Latina women not identifying as having an eating disorder despite meeting criteria. We focused on comparing those who did identify as having had an eating disorder with those who did not (despite all having met criteria for an eating disorder at some point) on: body mass index (BMI), severity of eating disorder symptoms and diagnosis type, and mental health treatment stigma tolerance.

We hypothesized a lower BMI among the participants who endorsed having had an eating disorder because they may fall into the anorexia nervosa-binge/purge category and may be more aware of their eating disorder simply by virtue of meeting the more classical presentation of eating disorders as portrayed in the media. Anorexia nervosa and bulimia nervosa are the most-recognized eating disorders (Gratwick-Sarll, Mond, & Hay, 2013; Sala, Reyes-Rodríguez,

Bulik, & Bardone-Cone, 2013; U.S. News & World Report, 2010) and undergraduates have clearer information and perceptions about anorexia nervosa and the compensatory behavioral component of bulimia nervosa than other eating disorders (Chiodo, Stanley, & Harvey, 1984; Gratwick-Sarll et al., 2013). It is less clear that an eating disorder not otherwise specified diagnosis or presentations primarily characterized by binge eating (i.e., binge eating disorder) would be as often identified as eating disorders. Thus, being lower weight for height may align more closely with the picture most individuals have of an eating disorder and contribute to identifying as having such a history.

We also investigated differences in severity of eating disorder symptoms, operationalized as frequency of engaging in binge eating and compensatory behaviors, and EAT-26 scores. We hypothesized that those who endorsed having had an eating disorder would engage in more frequent compensatory behaviors and have higher EAT-26 scores. As mentioned above, bulimia nervosa and anorexia nervosa are the typical eating disorders the lay population thinks of when they think of eating disorders (U.S. News & World Report, 2010). Furthermore, when asked about bulimia nervosa, college students described the behavioral aspects (e.g., purging – Chiodo et al., 1984). Thus, it may be that those who are engaging in high levels of compensatory behaviors may better fit the classical presentation of a person with an eating disorder and thus, participants who have these symptoms may be more likely to report having had an eating disorder. In terms of EAT-26 scores, the EAT-26 has been posited to capture anorexic attitudes in particular (Garner, Olmsted, Bohr, & Garfinkel, 1982). Similar to the hypothesis regarding compensatory behaviors, if participants are experiencing classical eating disorders symptoms such as anorexic attitudes and behaviors as assessed with the EAT-26, they may be more likely to endorse having had an eating disorder.

We do not hypothesize differences in terms of binge eating frequency because previous research suggests that binge eating may be more normative in Latin cultures (Shea, Cachelin, Uribe, Striegel, Thompson, & Wilson, 2012). Furthermore, before more studies began investigating the phenomenon of binge eating among Latinos, there was not a word for binge eating in any dialect of Spanish. Thus, awareness of binge eating disorder as a distinct eating disorder (or even binge eating as a disordered eating behavior) is likely low in this population, and we do not expect there to be any differences in binge eating frequency between those who endorsed having an eating disorder and those who did not endorse having an eating disorder.

In terms of eating disorder diagnosis type, we expect that those who endorsed having had an eating disorder will more likely meet diagnostic criteria for past or current anorexia nervosa or bulimia nervosa, while those who did not endorse having had an eating disorder will more likely meet diagnostic criteria for binge eating disorder or eating disorder not otherwise specified.

Lastly, we will compare the two groups on mental health treatment stigma tolerance. We believe it is especially important to investigate this construct, given the high degree of stigma associated with eating disorders and mental health concerns that contribute to Latinos downplaying or ignoring disordered eating symptoms. Fear of bringing shame to oneself or one's family or "losing face" (characteristics of Latin cultures) could deter Latinas from seeking treatment for an eating disorder (Cachelin et al., 2001; Steidel & Contreras, 2003) or even admitting that they have experienced one. Thus, we hypothesize that women who denied a history of an eating disorder will have lower mental health treatment stigma tolerance than women who endorsed an eating disorder history because they find seeking treatment and experiencing psychological concerns more stigmatizing.

This aspect of the study will elucidate the discrepancy between those who admit (and may ultimately seek treatment for) their eating disorder and those who deny an eating disorder history. It is especially important to understand factors that discourage treatment utilization given the fact that the majority of Latinos do not seek eating disorder treatment (Hart et al., 2011), and that they have less availability, accessibility, and utilization of mental health care services when compared to Caucasians (U.S. Department of Health and Human Services, 2001).

The Current Study

The current study investigates eating pathology and treatment experiences in a sample of Latinas with a history of binge eating disorder and/or bulimia nervosa, with a focus on culturally-specific factors. The first aim of our study is to gather quantitative data on treatment experiences, their perceived helpfulness, and factors (including culturally relevant ones) associated with treatment experiences. Our second aim is to test mechanistic models involving binge eating, disordered eating, body dissatisfaction, and culturally-specific factors. We hypothesize that negative affect will mediate the effects of acculturative stress, family disconnection, and discrimination on binge eating. Additionally, we hypothesize that thin-ideal internalization will mediate the effects of acculturation and acculturative stress on disordered eating and body dissatisfaction. A more exploratory aim involves comparing those who reported a history of an eating disorder to those who denied a history of an eating disorder, despite both groups meeting full diagnostic criteria. We hypothesize that those who reported a history of an eating disorder will have lower BMIs, higher EAT-26 scores, engage in more compensatory behaviors, be more likely to have a history of anorexia nervosa or bulimia nervosa (compared to binge eating disorder or eating disorder not otherwise specified), and have higher mental health treatment stigma tolerance. We do not expect the two groups to differ on binge eating frequency. The

findings from this body of work have the potential to shed light on experiences and factors unique to Latinas that could impact treatment efficacy and utilization, eating pathology, and identification of eating disorders.

CHAPTER 2: METHOD

Participants and Procedure

Participants included 78 Latinas who had a history of binge eating disorder and/or bulimia nervosa, as well as 41 Latinas who never had a history of any eating disorder, for a total of 119 participants. Only participants aged 18-25 were recruited for inclusion in this study. All participants identified their ethnicity as Hispanic/Latino. In terms of race, the majority of participants (67.2%) identified as White, 5.9% identified as “Other,” 5.0% as multiple races, 2.5% as Asian or Asian American, 1.7% as American Indian or Alaska Native, and .8% as Black. 16.8% did not report on their race. Participants with a history of an eating disorder had a mean age of 20.40 years ($SD = 1.92$); non-eating disorder control participants (hereafter referred to as “controls”) had a mean age of 19.59 years ($SD = 1.55$). Based on self-reported current height and weight, mean BMI for participants with a history of an eating disorder was 25.27 kg/m^2 ($SD = 6.25 \text{ kg/m}^2$). Control participants had a mean BMI of 24.28 kg/m^2 ($SD = 4.66 \text{ kg/m}^2$). Highest parental education was used as a proxy for socioeconomic status. On average, the highest education attained by parents of those with a history of an eating disorder was 13.08 years ($SD = 3.51$); for controls, the mean for the highest education attained by parents was 13.27 years ($SD = 3.24$). Participants with a history of an eating disorder were significantly older than control participants, $t(117) = -2.33, p = .021$, but the groups did not differ on BMI, $t(113) = -.89, p = .376$, or highest parental education, $t(117) = .44, p = .662$.

Participants were recruited primarily through postings to listservs and websites nationwide. Latina, psychology, and body-image related organizations at two- and four-year

colleges and universities were contacted and asked to forward information about our survey to their members. In total, we emailed organizations within the 11 states/districts (Arizona, North Carolina, Virginia, the District of Columbia, New Mexico, Florida, California, Texas, Colorado, New Jersey, and New York) that have the highest number of Latinos (U.S. Census Bureau, 2014). Organizations in these states ($N = 16,024$) were emailed and asked to share the survey with their members. Our study was also publicized through website postings on eating disorder-related organizations (e.g., Binge Eating Disorder Association). Furthermore, we posted flyers around college campuses and in community clinics with information on how to access the survey. Lastly, we recruited participants via the University of North Carolina's participant pool from introductory psychology classes. Participants who were not part of the University of North Carolina's participant pool received a \$10 Amazon gift card in return for their participation in an online survey lasting 45-60 minutes. Participants who were recruited via participant pool received one psychology course credit-hour for their participation. After completing the survey, all participants were sent a debriefing statement about the study. All aspects of this study were approved by the university's institutional review board.

As with many online surveys distributed broadly, many responses (in our case, 243) appeared to be invalid and were thus excluded from our final analyses. These responses were excluded for the following reasons: participants provided a clearly male name, responded from the same IP addresses or geographical coordinates within a few hours of one another, did not identify as Latina, provided 90% identical data as other participants, and/or provided identical email addresses. There were additionally 159 incomplete responses; of these responses, all but two were excluded. We retained these two participants' responses because they had completed more than 50% of the survey and appeared to have provided valid data.

We validated diagnostic history with a phone interview in which 10% (i.e., 8 participants) of the sample who met criteria for binge eating disorder or bulimia nervosa per the survey was randomly chosen and called. These participants were interviewed with the eating disorder module of the Structured Clinical Interview for DSM-IV. Participants who completed this 30-minute phone interview were entered into a drawing to win one of four \$50 cash prizes. Results of the phone interviews revealed that all participants but one qualified as having had a history of an eating disorder with binge eating components (i.e., anorexia nervosa – binge/purge subtype, bulimia nervosa, binge eating disorder). The one participant who did not meet diagnostic criteria for an eating disorder reported eating objectively large amounts of food within a two hour period and experiencing extreme guilt, but not loss of control.

Measures

Measure for determining lifetime and current eating disorder diagnosis.

The Eating Disorder Diagnostic Scale (EDDS; Stice, Telch, & Rizvi, 2000) was administered to determine lifetime and current eating disorder diagnoses (bulimia nervosa, binge eating disorder, anorexia nervosa, and eating disorder not otherwise specified). The EDDS is a 22-item survey that was developed to be a brief self-report diagnostic interview for anorexia nervosa, bulimia nervosa, and binge eating disorder using DSM-IV criteria. Although the EDDS was developed only to determine current eating disorder diagnosis, we modified the survey to assess lifetime eating disorder diagnosis as well. Acceptable internal consistency ($\alpha = .89$) and test-retest reliability ($r = .87$) have been found (Stice et al., 2000). Furthermore, the EDDS has demonstrated criterion validity through its high agreement between interviewer diagnosis and EDDS diagnosis for each disorder (mean $k = .83$), and has been validated among racially/ethnically diverse samples (Stice, Fisher, & Martinez, 2004). It should be noted that we

made determinations of eating disorder history using DSM-5 criteria, despite the fact that the EDDS was developed using DSM-IV criteria. We decided to use DSM-5 criteria to reflect current eating disorder diagnoses. Furthermore, changes in diagnoses from DSM-IV to DSM-5 primarily involve difference in frequencies of binge eating episodes and compensatory behaviors, and lack of amenorrhea. As we did not need to change the EDDS to use DSM-5 criteria, we thought that using the new diagnostic criteria would be more meaningful and applicable to current diagnoses.

Measures of treatment experiences, their perceived helpfulness, and factors (including culturally relevant ones) associated with treatment experiences.

Information related to treatment experiences was gathered via a set of questions created by the authors. Participants were asked to report whether they had ever seen the following health care professionals for an eating disorder: physician, psychologist/therapist for individual therapy, psychologist/therapist for family or couples therapy, psychologist/therapist for group therapy, nutritionist/dietician, psychiatrist, other (i.e., “other health care professional or other non-family person you sought help from for an eating disorder”), or “I have not seen any health care professional for an eating disorder.” If “other” was endorsed, participants were asked to enter the person’s profession/title. If “yes” was endorsed for any of these professionals, participants were asked to report the degree of helpfulness of the treatment experience, rated on a scale from 1 = *not at all helpful* to 5 = *extremely helpful*.

Participants were additionally asked if they had ever been in different treatment facilities for an eating disorder: residential treatment, inpatient hospitalization, day treatment/partial hospitalization, intensive outpatient program/IOP, or “I have not sought treatment in any treatment facility for an eating disorder”. If “yes” was endorsed for any of these facilities, participants were asked to report the degree of helpfulness of the program, rated on a scale from

1 = *not at all helpful* to 5 = *extremely helpful*. Participants were asked to describe any other treatment for an eating disorder, whether or not it was led by a health care professional. The same question (i.e., helpfulness) was asked of participant-generated treatments.

Treatment correlates proposed in the introduction were measured with the Stephenson Multigroup Acculturation Scale (Stephenson, 2000), questions created by the authors, and the Stigma Tolerance subscale of the Attitudes toward Seeking Professional Psychological Help (ATSPPH; Fischer & Turner, 1970).

The Stephenson Multigroup Acculturation Scale (SMAS; Stephenson, 2000) is a 32-item questionnaire that assesses two factors: the degree of immersion in 1) ethnic and 2) dominant societies through behaviors involving language, interactions, food, and media (e.g., “I am informed about current affairs in my native country,” “I like to eat American foods”). Items are scored on a 4-point scale (1 = *false*; 4 = *true*), with higher scores reflecting more immersion in the society. This measure was developed to be used across ethnic groups and was originally validated among a sample of African Americans, Asian Americans, Latinos, and Caucasians. It has acceptable internal consistency (.95 for ethnic society immersion and .75 for dominant society immersion), as well as support for construct validity since the ethnic society immersion factor was positively associated with two measures of ethnic orientation and was negatively associated with two measures of Anglo orientation, while the dominant society immersion factor was positively associated with two measures of Anglo orientation and negatively associated with two measures of ethnic orientation in a sample of undergraduates (Stephenson, 2000). In the current study, coefficient alpha was .92 for ethnic society immersion and .75 for dominant society immersion.

To assess barriers related to treatment, participants were asked the question: “How much of a barrier was ____ to seeking or receiving treatment for your eating disorder?” and were then given the following options: stigma related to eating disorders, shame related to eating disorders, stigma related to mental health treatment, shame related to mental health treatment, lack of referral for treatment, not knowing where to get treatment, cost of services, language barriers, lack of health insurance. Participants were asked to report how much of a barrier each option was to seeking or receiving treatment (rated on a scale from 1 = *no barrier* to 5 = *large barrier*).

In order to distinguish stigma and shame, we defined stigma for the participants as “a label that sets a person apart from others and links the labeled person to undesirable characteristics” and shame for the participants as “a negative emotion that occurs when a person experiences failure in relation to personal or social standards, feels responsible for this failure, and believes that the failure reflects self-inadequacy” (Fortenberry et al., 2002, p. 378).

The last treatment correlate, mental health treatment stigma tolerance, was measured with the Stigma Tolerance subscale of the Attitudes toward Seeking Professional Psychological Help (ATSPPH; Fischer & Turner, 1970). The Stigma Tolerance subscale is a 5-item questionnaire that measures the degree to which one is afraid of being stigmatized due to seeking mental health treatment (e.g., “Had I received treatment in a mental hospital, I would not feel that it ought to be ‘covered up.’”). Items are scored on a 4-point scale (0 = *strongly disagree*; 3 = *strongly agree*) with higher scores reflecting more tolerance of mental health treatment stigma. The Stigma Tolerance subscale demonstrated acceptable internal consistency among a large ethnically diverse sample of female undergraduates ($\alpha = .65$; Dotson, Masuda, & Cohen, 2011). In the current study, coefficient alpha was .66.

Measures to test mechanistic models involving binge eating, disordered eating, body dissatisfaction, and culturally-specific factors.

Model 1: Escape theory models.

Acculturative stress. Acculturative stress was assessed with the short version of the Social, Attitudinal, Familial, Environmental measure (SAFE; Mena, Padilla, & Maldonado, 1987; Padilla, Wagatsuma, & Lindholm, 1985). The SAFE is a 24-item questionnaire that assesses acculturative stress in social, attitudinal, familial, and environmental domains (e.g., “People look down upon me if I practice customs of my culture,” “In looking for a good job, I sometimes feel that my ethnicity is a limitation”). Items are scored on a 5-point scale (1= *not stressful*; 5 = *extremely stressful*); participants are additionally given the option of endorsing “0” if an item is not applicable to them. Possible scores range from 0 to 120, with higher scores indicating higher acculturative stress. The SAFE has acceptable internal consistency among a sample of Latinas ($\alpha = .91$; Kroon Van Diest et al., 2013), as well as demonstrated predictive validity for depression and anxiety among Latinas (Kiang, Grzywacz, Marin, Arcury, & Quandt, 2010). In the current study, coefficient alpha was .91.

Family functioning. Family functioning was assessed with six questions from the general functioning scale of the Family Assessment Device (Epstein, Baldwin, & Bishop, 1983; Miller, Epstein, Bishop, & Keitner, 1985). Participants were asked: “How strongly do you agree with the following statements? For these questions, think about your family in general (including your parents and your brothers and sisters) (1) Family members are accepted for who they are; (2) Making decisions is a problem for the family; (3) We don't get along well together; (4) We can express feelings to each other; (5) Planning family activities is difficult because we misunderstand each other; (6) We confide in each other (By ‘confide’ we mean to trust your family members enough to tell them something that is important to you).” Items are measured on

a 4-point scale (1 = *strongly disagree*; 4 = *strongly agree*) with responses recoded as need be so that higher scores reflect higher family functioning.

The general functioning scale of the Family Assessment Device has shown high validity ($r = .92$) and test-retest reliability ($r = .71$; Epstein et al., 1983) among samples of racially/ethnically diverse participants. Furthermore, these six questions measuring family functioning have been used in prior work and have shown acceptable internal consistency among a racially/ethnically diverse adolescent sample ($\alpha = .70$; Berge, Wall, Larson, Loth, & Neumark-Sztainer, 2013). In the current study, coefficient alpha was .78.

Discriminatory stress. Discriminatory stress was assessed with the appraised racist events scale of the Schedule of Racist Events (SRE; Landrine & Klonoff, 1996). The SRE is an 18-item, multi-part measure that assesses lifetime and past year frequency of racist discrimination, as well as the extent to which these events were stressful. Before completing this questionnaire, participants completed an open-ended question regarding their race/ethnicity. Their response was then piped into the SRE items via survey software so that each item reflected the participants' reported race/ethnicity in order to make the questions more salient. Of note, all participants (with the exception of two, who reported "white" but indicated that they were Latina elsewhere) wrote in some variant of Latina. Questions regarding exposure to racist events on the SRE are scored on a 6-point scale (1 = *never*; 2 = *once in a while (less than 10% of the time)*; 3 = *sometimes (10%–25% of the time)*; 4 = *a lot (26%–49% of the time)*; 5 = *most of the time (50%–70% of the time)*; 6 = *almost all of the time (more than 70% of the time)*). Questions regarding stress associated with exposure to racist events are also scored on a 6-point scale (1 = *not at all*; 6 = *extremely*). Thus, each item on the SRE presents a discriminatory event (e.g., "How many times have you gotten into an argument or a fight about something racist that was done to you or done

to somebody else?") with three questions assessing frequency and stress (i.e., "How many times in the past year?" "How many times in your entire life?" "How stressful was this for you?").

Total scores are created by summing past year frequency of racist events to receive the Recent Racist Events score, summing entire lifetime frequency of racist events to receive the Lifetime Racist Events score, and summing scores on how stressful each type of event was to receive the Appraised Racist Events score, with higher scores indicating more exposure to racist events and more stress associated with these events.

Although this questionnaire was originally developed to assess exposure and stress related to racist events among African Americans, it has demonstrated acceptable internal consistency among a racially/ethnically diverse community sample of African American, Asian American, Latina, and Caucasian women (all alpha coefficients across racial groups = .87 - .91; Ro & Choi, 2009). Furthermore, it has demonstrated construct validity through significant correlations between SRE subscale scores and psychological distress among undergraduate Latinas (Huynh, Devos, & Dunbar, 2012). In the current study, coefficient alpha for appraised racist events was .95. We chose to use the appraised racist events scale in analyses over the other two scales (i.e., past year racist events, lifetime racist events) because it is more relevant to escape theory (Heatherton & Baumeister, 1991). The appraised racist events scale reflects the *stress* that one feels in response to a racist event, which would then (according to escape theory) lead to binge eating as a form of emotion regulation.

Negative affect. Negative affect was measured with the Center for Epidemiological Studies Depression Scale (CES-D; Radloff, 1977). The CES-D is a 20-item questionnaire that measures physical and psychological symptoms of depression (e.g., "I talked less than usual." "I thought my life had been a failure."). Items are scored on a 4-point scale in which participants are asked

to report how often over the past week they have experienced various symptoms (1 = *rarely or none of the time (less than one day)*; 2 = *some or a little of the time (1-2 days)*; 3 = *occasionally or a moderate amount of time (3-4 days)*; 4 = *most or all of the time (5-7 days)*). Four items related to positive affect are reverse-scored and a total composite score is derived by summing the item responses so that higher scores reflect more depressive symptoms. When comparing groups of Black, White, Asian/Indian, and Latino youth, the CES-D met some of the criteria for strong measurement invariance, indicating that it is an acceptable screening measure for depression among Latinos (Skriner & Chu, 2014). In this study, coefficient alpha was .92.

Binge eating. Binge eating was assessed using the Eating Disorder Examination Questionnaire (EDE-Q; Fairburn & Beglin, 1994). Participants were asked the number of times in the past 28 days they ate “what other people would regard as an unusually large amount of food” and then asked how many of these episodes of overeating were accompanied by a sense of “loss of control.” This combination of an objectively large amount of food and a loss of control represents binge eating.

Model 2: Sociocultural models.

Acculturation. Acculturation was assessed with the dominant society immersion scale of the Stephenson Multigroup Acculturation Scale (SMAS; Stephenson, 2000), described earlier as part of the measures of culturally relevant factors associated with treatment experiences.

Acculturative stress. Acculturative stress was assessed with the short version of the Social, Attitudinal, Familial, Environmental measure (SAFE; Mena et al., 1987; Padilla et al., 1985), described earlier as part of the measures for Model 1.

Thin-ideal internalization. Thin-ideal internalization was measured with the Internalization: Thin/Low Body Fat subscale of the Sociocultural Attitudes Towards Appearance Questionnaire -

4 (SATAQ-4; Schaefer et al., 2014). The Internalization: Thin/Low Body Fat subscale of the SATAQ-4 is composed of five items that measure thin-ideal internalization (e.g., “I want my body to look very thin.”). Items are scored on a 5-point scale (1 = *definitely disagree*; 5 = *definitely agree*) with higher scores reflecting more internalization of the thin-ideal. When looking at an earlier version of the SATAQ, the thin-ideal internalization subscale demonstrated acceptable internal consistency among Latina undergraduates ($\alpha = .89$; Cashel, Cunningham, Landeros, Cokley, & Muhammad, 2003). In this study, coefficient alpha was .85.

Disordered eating. Disordered eating was assessed with the Eating Attitudes Test-26 (EAT-26; Garner et al., 1982). The EAT-26 is a 26-item self-report questionnaire that measures the degree to which participants engage in a variety of disordered eating behaviors and attitudes (e.g., “I am terrified about being overweight,” “I avoid eating when I am hungry”). Items are rated on a 6-point scale (1 = *never*, 6 = *always*), with higher scores reflecting greater eating pathology. Items endorsed as 1, 2, or 3 are scored as “0,” while items marked as 4, 5, or 6 are scored as “1,” “2,” or “3,” respectively. The EAT-26 has been shown to be reliable among college women ($\alpha = .92$; Moradi, Dirks, & Matteson, 2005). As an indicator of this measure’s validity, studies have found the EAT-26 to be effective as a screening measure, with a cutoff score of 20 indicating a probable eating disorder among a sample of men and women aged 16-35 (King, 1989; 1991). In the current study, coefficient alpha was .92.

Weight/shape concern. Weight/shape concern was assessed using the Eating Disorder Examination Questionnaire (EDE-Q; Fairburn & Beglin, 1994). It is derived from the Eating Disorder Examination (EDE) interview (Fairburn & Cooper, 1993) and is one of the most commonly used measures of eating disorder behaviors and attitudes (Anderson & Williamson, 2002). Items are scored on a 7-point scale, with higher scores reflecting greater eating pathology.

Studies have shown high levels of agreement between earlier versions of the EDE-Q and the EDE across various populations (Fairburn & Beglin, 1994; Mond, Hay, Rodgers, Owen, & Beumont, 2004). The EDE-Q includes subscales of Weight Concern and Shape Concern which are combined in this study, given evidence that these two subscales loaded on the same factor in a study investigating the factor structure of the EDE-Q (Peterson et al., 2007). Acceptable internal consistency (.89 and .93) and test-retest reliability (.92 and .94) have been found for the subscales of Weight Concern and Shape Concern of an earlier version of this measure, respectively (Luce & Crowther, 1999). In the current study, coefficient alpha for the combined Weight Concern and Shape Concern subscales was .96.

Measures to compare factors that may differentiate those who endorsed having an eating disorder versus those who did not, despite both groups meeting full diagnostic criteria for an eating disorder.

Body mass index. Participants' self-reported weight and height were used to compute BMI.

Severity of eating pathology. Severity of eating pathology was measured with the aforementioned Eating Attitudes Test-26 (EAT-26; Garner et al., 1982) and binge eating frequency from the Eating Disorder Examination Questionnaire (EDE-Q; Fairburn & Beglin, 1994). Frequency of compensatory behaviors was also measured using the EDE-Q. Participants were asked the number of times in the past 28 days they had vomited, taken laxatives or diuretics, and exercised in a hard, driven, or compulsive way as a means of controlling their shape or weight. Responses for all items were summed into a total score representing the minimum number of occasions participants engaged in compensatory behaviors.

Mental health treatment stigma tolerance. Mental health treatment stigma tolerance was measured with the aforementioned Stigma Tolerance subscale of the Attitudes toward Seeking Professional Psychological Help (ATSPPH; Fischer & Turner, 1970).

CHAPTER 3: RESULTS

Descriptive Statistics Related to Eating Disorder Diagnoses

Based on the EDDS, participants were given the following possible DSM-5 diagnoses both in the past and in the present: bulimia nervosa, binge eating disorder, anorexia nervosa, or eating disorder not otherwise specified. Eating disorder not otherwise specified included participants who had a subthreshold diagnosis of bulimia nervosa, binge eating disorder, or anorexia nervosa or a full diagnosis of purging disorder (defined as engaging in a purging behavior – vomiting, laxative use, diuretic use – at least one time per week while not at an anorexic weight and not engaging in any binge eating). In order to diagnose a past instance of anorexia nervosa, we relied on BMI data ($\text{BMI} < 18.5 \text{ kg/m}^2$) derived from participants' self-report of lowest weight and height at that weight, and the absence of at least three consecutive menstrual cycles. We did not collect data from these participants about the psychological factors occurring concurrently with this lowest weight that would be associated with anorexia nervosa (i.e., intense fear of gaining weight or becoming fat even though underweight, disturbance in the way in which one's body weight or shape is experienced). We diagnosed bulimia nervosa and binge eating disorder according to the required DSM-5 criteria in terms of frequencies of behaviors (at least one time per week engaging in binge eating and – in the case of bulimia nervosa – one time per week engaging in a compensatory behavior) and overvaluation of weight/shape. Of the 78 participants with an eating disorder history, 72 met current criteria for an eating disorder. Of the 72, four met current criteria for anorexia nervosa, 47 met current criteria for bulimia nervosa, 10 met current criteria for binge eating disorder, and 11 met current criteria

for eating disorder not otherwise specified (e.g., purging disorder, subthreshold bulimia nervosa or binge eating disorder). Of those participants with an eating disorder history who did not have any current eating disorder diagnosis ($n = 6$), only one did not engage in any eating disorder behaviors over the past three months (e.g., reported zero frequencies of binge eating and compensatory behaviors). Thus, this sample of 78 Latinas was overwhelmingly a sample with current eating disorders rather than only past eating disorders.

Aim 1: To Gather Quantitative Data on Treatment Experiences, Their Perceived Helpfulness, and Factors (Including Culturally Relevant Ones) Associated With Treatment Experiences

The data provided regarding treatments were examined in several ways. For example, we used descriptive statistics to identify the types and number of treatments for eating disorders used as well as their perceived helpfulness. We also re-coded the data regarding barriers to seeking or receiving treatment (e.g., stigma related to eating disorders, lack of referral for treatment) so that the independent variable was type of barrier (i.e., numbers 1 – 9 to represent the nine barriers) and the dependent variable was average barrier to treatment score. We then conducted a one-way ANOVA, which allowed us to compare all nine barriers against one another and to see which barriers were rated as the most influential on treatment seeking.

We also examined potential correlates of treatment experiences using established measures of culturally-specific factors (i.e., Stephenson Multigroup Acculturation Scale; Stephenson, 2000; Stigma Tolerance subscale; Fischer & Turner, 1970). We performed correlations between the culturally-specific factors (i.e., acculturation, mental health stigma) and the treatment experiences variables of total number of treatments and average perceived helpfulness of all treatments.

All of these analyses were run using the subsample who identified a history of an eating disorder at the start of the survey. Participants were only asked questions regarding treatment experiences if they reported having had an eating disorder. Although 78 women met criteria for lifetime or current bulimia nervosa or binge eating disorder, only 44 participants identified as having had an eating disorder. Of these 44, only 43 participants provided treatment data due to one participant dropping out of the survey before getting to the treatment questions. Of additional note, three of the participants who self-identified as having had an eating disorder and who responded to the questions related to treatment experiences did not meet diagnostic criteria for an eating disorder history, but were still included in these analyses. These women had some eating disorder behaviors (e.g., eating disorder thoughts, binge eating, excessive exercise, fasting) but they were not severe or frequent enough to warrant an eating disorder diagnosis.

Of the 43 participants who answered questions related to treatment experiences, 15 (34.88%) reported that they did not receive any treatment for their eating disorder. Of those who sought treatment ($n = 28$, 65.12%), participants sought on average 4.00 different treatment experiences ($SD = 2.83$). As is evidenced in Table 1, the most frequently seen healthcare professionals among those who sought treatment for an eating disorder were psychologist/therapist for individual therapy and nutritionist/dietician ($ns = 19$, 67.86%). The most frequented intensive treatment was intensive outpatient program ($n = 7$, 25.00%).

In terms of helpfulness, participants endorsed “other” treatment providers as being the most helpful ($M = 4.80$, $SD = .45$), where helpfulness of treatment was rated on a scale from 1 = *not at all helpful* to 5 = *extremely helpful*. “Other” treatment providers that participants listed were a specialist on eating disorders, a social worker, a yoga teacher, and an endocrinologist. Of the options we provided, participants endorsed psychologist/therapist led group therapy as the

most helpful ($M = 4.25$, $SD = 1.17$). A one-way ANOVA conducted with treatment type as the independent variable and average treatment helpfulness as the dependent variable revealed that treatment helpfulness significantly differed as a function of treatment type, $F(11, 100) = 2.14$, $p = .024$, partial $\eta^2 = .19$. This significant effect was followed up with Tukey HSD tests for pair-wise comparisons. Although no pair-wise comparisons were significant, “other” treatment ($M = 4.80$, $SD = .45$) was marginally significantly more helpful than physicians ($M = 2.75$, $SD = 1.34$; $p = .082$).

In terms of barriers to seeking or receiving treatment, participants endorsed cost of treatment as the most influential barrier ($M = 3.40$, $SD = 1.45$), while language barriers were endorsed as the least influential ($M = 1.29$, $SD = .77$). Given the primary recruitment strategy of recruiting from 2- and 4-year colleges, it is likely that we did not have a sample that was faced with many language concerns. The next lowest barrier after language was lack of health insurance ($M = 2.36$, $SD = 1.59$). One one-way ANOVA was conducted with barrier type as the independent variable and the average barrier’s influence on seeking or receiving treatment as the dependent variable. The results of the one-way ANOVA were significant, $F(8, 365) = 10.91$, $p < .001$, partial $\eta^2 = .19$; this significant effect was followed up with Bonferroni tests for pair-wise comparisons (see Table 2). The pattern of results revealed that language barriers, lack of health insurance, and lack of referral were significantly the least influential barriers to seeking or receiving treatment, while eating disorder shame, and cost of treatment were the most influential.

Finally, we performed correlations between the culturally-specific factors (i.e., acculturation and mental health stigma) and the treatment experiences variables of total number of treatments and average perceived helpfulness of all treatments. Results from this analysis indicated that there was a significant, positive relationship between helpfulness of all treatments

and dominant society immersion, such that those who were more immersed in White majority culture found their eating disorder treatment to be more helpful on average ($r = .43$; $p = .022$; see Table 3). No other relationships between the culturally-specific factors and treatment experiences variables were significant.

Aim 2: To Test Mechanistic Models Involving Binge Eating, Disordered Eating, Body Dissatisfaction, and Culturally-Specific Factors

Model 1: Escape theory models. We first examined descriptive statistics of bivariate correlations and then tested the mediation models. An evaluation of assumptions for parametric data revealed a skewed distribution for binge eating. Since this is a count variable, Poisson regressions were used with robust standard errors via restricted maximum likelihood as recommended by Cameron and Trivedi (2009). In order to have a more nuanced understanding of the relationships between the variables, we examined the total, direct, and indirect effects of each mediated relationship in order to determine whether mediation took place. We estimated indirect effects with the procedure outlined by Preacher and Hayes (2004). The Preacher and Hayes (2004) method, unlike the Baron and Kenny (1986) method, does not require a significant direct effect between X and Y in order to test indirect effects. Pathways are determined to be mediated when a significant indirect effect estimate is obtained. Of note, we are unable to interpret indirect effects in the normal way due to our use of a count variable (i.e., binge eating) as the dependent variable. The indirect effects presented are with respect to the log rate of the count variable instead of standard regression coefficients. Mplus Version 7.0 (Muthén & Muthén, 2007) was used to run these analyses.

Due to our relatively small sample size, we considered using bootstrapping analyses as described by Preacher and Hayes (2004; 2008) for estimating indirect effects with single mediators; however, more recent work has found inflated Type I and II error rates with this

method (Fritz, Taylor, & MacKinnon, 2012; Koopman, Howe, Hollenbeck, & Sin, 2015) and we conducted our analyses without bootstrapping as a result.

Correlations. Table 4 includes the means and standard deviations of the Model 1 variables, as well as their correlations. As hypothesized, the independent variables of acculturative stress and discriminatory stress were both significantly positively correlated with the mediator of negative affect and the dependent variable of binge eating. That is, greater acculturative stress and greater discriminatory stress were associated with more negative affect and more binge eating. Family disconnection was significantly negatively correlated with negative affect indicating that more family connection is associated with less negative affect. Of note: the family disconnection variable is such that a higher score on family disconnection reflects *lower* disconnection (i.e., greater family connection/functioning). There was not a significant relationship between family disconnection and binge eating. Lastly, negative affect was significantly positively correlated with binge eating such that more negative affect was associated with more binge eating.

Mediation models. We tested three different mediation models testing escape theory of binge eating using acculturative stress, family disconnection, discriminatory stress, and negative affect. See Figure 4 for the depictions of each of these three mediation models with standardized path coefficients.

The first escape theory model involved acculturative stress as the independent variable, negative affect as the mediator, and binge eating as the dependent variable. There were several statistically significant pathways in this acculturative stress mediation model of Model 1. The pathways from acculturative stress to negative affect ($\beta = .42, p < .001$) and from negative affect to binge eating ($\beta = .88, p < .001$) were significant. The pathway from acculturative stress to binge eating ($\beta = .24, p = .419$) was not significant. Turning to the total, direct, and indirect

effects, the total indirect effects of acculturative stress on binge eating were significant ($z = .01$; $p = .002$), indicating that there is empirical support for the hypothesis that the effect of acculturative stress on binge eating was mediated by negative affect. The mediated pathway was such that more acculturative stress led to more negative affect, which led to more binge eating. It should be noted that we use causal language for all of the mediation models in aims 2 and 3. This was a cross-sectional study, and thus when we use causal language, we are referring to the theoretical model which implies causation in the absence of longitudinal data.

The direct effect of acculturative stress on binge eating was not significant ($z = .01$; $p = .436$).

The total effects from acculturative stress to binge eating were significant ($z = .02$; $p = .031$).

There were several statistically significant pathways in the family disconnection mediation model of Model 1. The pathways from family disconnection to negative affect ($\beta = -.46$, $p < .001$) and from negative affect to binge eating ($\beta = 1.03$, $p < .001$) were significant. The pathway from family disconnection to binge eating ($\beta = .07$, $p = .794$) was not significant.

Turning to the total, direct, and indirect effects, the total indirect effects of family disconnection on binge eating were significant ($z = -.07$; $p = .001$), indicating that there is empirical support for the hypothesis that the effect of family disconnection on binge eating was mediated by negative affect. The mediated pathway was such that more family disconnection led to more negative affect, which led to more binge eating. The direct effect of family disconnection on binge eating was not significant ($z = .01$; $p = .793$). The total effects from family disconnection to binge eating were not significant ($z = -.06$; $p = .097$).

All of the pathways in the discriminatory stress mediation model of Model 1 were statistically significant. The pathways from discriminatory stress to negative affect ($\beta = .27$, $p = .001$), from negative affect to binge eating ($\beta = .70$, $p < .001$), and from discriminatory stress to

binge eating ($\beta = .55, p = .005$) were all significant. Turning to the total, direct, and indirect effects, the total indirect effects of discriminatory stress on binge eating were significant ($z = .01; p = .010$), indicating that there is empirical support for the hypothesis that the effect of discriminatory stress on binge eating was mediated by negative affect. The mediated pathway was such that more discriminatory stress led to more negative affect, which led to more binge eating. The direct effect of discriminatory stress on binge eating was significant ($z = .02; p = .011$), as were the total effects from discriminatory stress to binge eating ($z = .02; p < .001$).

Model 2: Sociocultural models. We first examined descriptive statistics of bivariate correlations and then tested the mediation models. We tested four sociocultural mediation models: acculturation in the thin-ideal internalization/disordered eating and thin-ideal internalization/body dissatisfaction mediation models and acculturative stress in the thin-ideal internalization/disordered eating and thin-ideal internalization/ body dissatisfaction mediation models. Hypothesized models were tested using maximum likelihood estimation. In order to have a more nuanced understanding of the relationships between the variables, we examined the total, direct, and indirect effects of the mediated relationships, as well as total variance accounted for in the respective dependent variables (i.e., disordered eating, body dissatisfaction). Mplus Version 7.0 (Muthén & Muthén, 2007) was used to run these analyses. See Figure 5 for the depictions of each of these four mediation models with standardized path coefficients.

Correlations. Table 5 includes the means and standard deviations of the Model 2 variables, as well as their correlations. As hypothesized, the independent variable of acculturative stress was significantly positively correlated with the mediator of thin-ideal internalization and the dependent variables of disordered eating and weight/shape concern. That is, greater acculturative stress was associated with more thin-ideal internalization, disordered eating, and weight/shape concern. In

contrast, acculturation was only significantly negatively correlated with disordered eating, such that those who were less immersed in dominant society engaged in more disordered eating. Thin-ideal internalization was significantly positively correlated with disordered eating and weight/shape concern. Interestingly, acculturation and acculturative stress were significantly negatively correlated, such that the less immersed one is in dominant society, the more acculturative stress she experiences.

Disordered eating mediation models. There were several statistically significant pathways in the acculturation mediation model of Model 2. The pathways from thin-ideal internalization to EAT-26 scores ($\beta = .62, p < .001$) and from acculturation to EAT-26 scores ($\beta = -.28, p < .001$) were significant. The pathway from acculturation to thin-ideal internalization ($\beta = .08, p = .365$) was not significant. Approximately 43.3% of the variance in EAT-26 scores is explained by acculturation and thin-ideal internalization. Turning to the total, direct, and indirect effects, the total indirect effects of acculturation on thin-ideal internalization were not significant ($z = .05; p = .375$), indicating that there is not empirical support for the hypothesis that the effect of acculturation on EAT-26 scores was mediated by thin-ideal internalization. The direct effect of acculturation on EAT-26 scores was significant ($z = -.28; p < .001$). The total effects from acculturation to EAT-26 scores were also significant ($z = -.23; p = .009$).

All of the pathways in the acculturative stress mediation model of Model 2 were statistically significant. The pathways from acculturative stress to thin-ideal internalization ($\beta = .19, p = .033$), from thin-ideal internalization to EAT-26 scores ($\beta = .57, p < .001$), and from acculturative stress to EAT-26 scores ($\beta = .16, p = .031$) were all significant. Approximately 37.9% of the variance in EAT-26 scores is explained by acculturative stress and thin-ideal internalization. Turning to the total, direct, and indirect effects, the total indirect effects of

acculturative stress on EAT-26 scores were significant ($z = .11$; $p = .036$), indicating that there is empirical support for the hypothesis that the effect of acculturative stress on EAT-26 scores was mediated by thin-ideal internalization. The mediated pathway was such that more acculturative stress led to more thin-ideal internalization, which led to higher EAT-26 scores. The direct effect of acculturative stress on EAT-26 scores was significant ($z = .16$; $p = .031$), as were the total effects from acculturative stress to EAT-26 scores ($z = .27$; $p = .002$).

Body dissatisfaction mediation models. There were several statistically significant pathways in the acculturation mediation model of Model 2. The pathways from thin-ideal internalization to body dissatisfaction ($\beta = .72$, $p < .001$) and from acculturation to body dissatisfaction ($\beta = -.17$, $p = .009$) were significant. The pathway from acculturation to thin-ideal internalization ($\beta = .08$, $p = .366$) was not significant. Approximately 52.0% of the variance in body dissatisfaction is explained by acculturation and thin-ideal internalization. Turning to the total, direct, and indirect effects, the total indirect effects of acculturation on thin-ideal internalization were not significant ($z = .06$; $p = .372$), indicating that there is not empirical support for the hypothesis that the effect of acculturation on body dissatisfaction was mediated by thin-ideal internalization. The direct effect of acculturation on body dissatisfaction was significant ($z = -.17$; $p = .009$). The total effects from acculturation to body dissatisfaction were also significant ($z = -.11$; $p = .236$).

All of the pathways in the acculturative stress mediation model of Model 2 were statistically significant. The pathways from acculturative stress to thin-ideal internalization ($\beta = .19$, $p = .033$), from thin-ideal internalization to body dissatisfaction ($\beta = .66$, $p < .001$), and from acculturative stress to body dissatisfaction ($\beta = .20$, $p = .002$) were all significant. Approximately 53.0% of the variance in body dissatisfaction is explained by acculturative stress and thin-ideal internalization. Turning to the total, direct, and indirect effects, the total indirect effects of

acculturative stress on body dissatisfaction were significant ($z = .13$; $p = .032$), indicating that there is empirical support for the hypothesis that the effect of acculturative stress on body dissatisfaction was mediated by thin-ideal internalization. The mediated pathway was such that more acculturative stress led to more thin-ideal internalization, which led to more body dissatisfaction. The direct effect of acculturative stress on body dissatisfaction was significant ($z = .20$; $p = .002$), as were the total effects from acculturative stress to body dissatisfaction ($z = .32$; $p < .001$).

Exploratory Aim: To Identify Factors that may Differentiate Those who Endorsed Having an Eating Disorder Versus Those who did not, Despite Both Groups Meeting Full Diagnostic Criteria for an Eating Disorder

We conducted t-tests between the subsamples that emerged based on whether or not they self-identified as having had an eating disorder, despite all having met lifetime criteria for an eating disorder. In particular, we compared two groups: those who met criteria for a history of an eating disorder and endorsed having had a history of an eating disorder ($n = 41$), and those who met criteria for a history of an eating disorder but denied having a history of an eating disorder ($n = 36$). There was one participant who met diagnostic criteria for current bulimia nervosa but who did not answer the question related to history of an eating disorder. Thus, these analyses were run with the 77 participants who met diagnostic criteria for an eating disorder *and* answered the question related to eating disorder history. These groups were compared on BMI, eating pathology severity (operationalized as number of times binge eating in the past 28 days from the EDE-Q, number of times engaging in compensatory behaviors in the past 28 days from the EDE-Q, and EAT-26 total score), and mental health treatment stigma tolerance.

We also conducted a chi-square analysis in order to examine if the women who endorsed a history of an eating disorder differed from those who did not endorse an eating disorder history

in terms of meeting criteria for lifetime anorexia nervosa or bulimia nervosa compared to eating disorders that may be perceived by the general population as being less severe (i.e., binge eating disorder and eating disorder not otherwise specified).

Due to the fact that we performed five t-tests, we used Holm's modification to the Bonferroni approach (Holm, 1979; for a review see Holland & Copenhaver, 1988). We specified a priori a family of n_F hypotheses to test, as well as a family-wise error rate (α_F) of .05. We then rank-ordered all significant tests according to p -value from smallest to largest. The test with the smallest p -value was evaluated at the α_F/n_F level; the test with the second smallest p -value was evaluated at the $\alpha_F/(n_F - 1)$ level; the third-ranked test was evaluated at the $\alpha_F/(n_F - 2)$ level; and so forth until a non-significant test was encountered and the sequential procedure was discontinued. In terms of power calculations, the lowest family-wise error rate we used is $\alpha_F = .01$ for t-tests. This error rate was calculated by dividing $\alpha = .05$ by the total number of t-tests performed (i.e., 5). Using G*Power (Faul, Erdfelder, Buchner, & Lang, 2009; Faul, Erdfelder, Lang, & Buchner, 2007), power for the t-tests and chi-square analysis was calculated. Assuming a large effect ($d = .8$), adequate power ($\beta = .87$) is present with a sample size of 77 at the $\alpha_F = .01$ level for the t-tests. Assuming a medium effect ($w = .3$), adequate power ($\beta = .75$) is present with a sample size of 77 at the $\alpha_F = .05$ level for the chi-square analysis.

Body mass index analysis. The two subgroups did not differ in terms of current BMI, $t(71) = -1.07$, $p = .288$. Those who reported a history of an eating disorder had an average BMI of 24.32 kg/m² ($SD = 5.68$); those who denied a history of an eating disorder had an average BMI of 25.79 kg/m² ($SD = 6.00$).

Severity of eating pathology analyses. When comparing the subgroups on eating pathology severity, we found that those who reported a history of an eating disorder did not significantly

differ in binge eating frequency ($M = 4.77, SD = 5.53$) from those who did not report a history of an eating disorder ($M = 2.94, SD = 4.51$), $t(68) = 1.52, p = .134$. In contrast, those who reported a history of an eating disorder engaged in significantly more compensatory behaviors in the past 28 days ($M = 9.32, SD = 11.84$) than those who did not report a history of an eating disorder ($M = 2.56, SD = 4.05$), $t(45.97) = 3.32, p = .002$. Lastly, those who reported a history of an eating disorder had significantly higher EAT-26 scores ($M = 24.51, SD = 15.61$) than those who did not report a history of an eating disorder ($M = 12.31, SD = 10.72$), $t(67.60) = 3.97, p < .001$. The chi-square analysis involving the presence or absence of meeting lifetime diagnostic criteria for anorexia nervosa or bulimia nervosa and whether or not one endorsed eating disorder history revealed that there was a significant relationship between these variables, $\chi^2(1, N = 77) = 6.47, p = .011$ (see Table 6). Of note, of the women who reported that they had a history of an eating disorder, 90% met criteria for anorexia nervosa or bulimia nervosa at some point. In contrast, of those who did not report an eating disorder history, only 67% met past or current criteria for anorexia nervosa or bulimia nervosa.

Mental health treatment stigma tolerance analysis. Turning to mental health treatment stigma tolerance, those who reported a history of an eating disorder had significantly more tolerance of mental health treatment stigma ($M = 7.30, SD = 3.57$) than those who did not report a history of an eating disorder ($M = 5.61, SD = 2.99$), $t(74) = 2.22, p = .030$. It should be noted that when applying Holm's modification to the Bonferroni approach in an effort to reduce Type I error, this t-test finding was not significant, as it was not below the family-wise error rate of .0125.

CHAPTER 4: DISCUSSION

This study had two primary aims: 1) to gather quantitative data on treatment experiences, their perceived helpfulness, and factors (including culturally relevant ones) associated with treatment experiences; and 2) to test mechanistic models involving binge eating, disordered eating, body dissatisfaction, and culturally-specific factors. We also had the exploratory aim of comparing those who reported a history of an eating disorder to those who denied a history of an eating disorder, despite both groups meeting full diagnostic criteria.

Aim 1: To Gather Quantitative Data on Treatment Experiences, Their Perceived Helpfulness, and Factors (Including Culturally Relevant Ones) Associated With Treatment Experiences

Fifteen of 43 participants (about 35%) reported that they never sought treatment for their eating disorder; this percentage is likely higher as we had a total of 78 participants meet full diagnostic criteria for an eating disorder, but 34 did not identify as having had an eating disorder and were thus not asked about eating disorder treatment.

Of those who did seek treatment for their eating disorder, participants sought an average of four different treatment experiences. The most frequently seen healthcare provider was a psychologist/therapist for individual therapy and a nutritionist/dietician. We provided participants with a list of health care providers, as well as an “other” option, and participants ($n = 4$) endorsed “other” treatment as the most helpful. Of the treatment providers we provided, participants reported group therapy to be the most helpful. Group therapy for Latinas could be especially beneficial given that Latinas often feel very isolated and abnormal due to their eating disorder (Reyes-Rodríguez et al., 2013); seeing that others outside of the stereotypical image

(i.e., White, wealthy, very thin) suffer from similar concerns could be a normalizing experience. Indeed, support from other Latinas was cited as a needed aspect of eating disorder treatment among a focus group of Latinas with a history of an eating disorder (Reyes-Rodríguez et al., 2013).

Replicating these results among a larger and more diverse sample will be especially important in light of our findings that treatment helpfulness differed significantly by treatment type. Follow-up analyses indicated a trend for treatment from a physician being less helpful than “other” treatments. These findings are expected given past work related to clinician bias in which Latinas were less likely to be referred for further evaluation and were significantly less likely to be asked about eating pathology by a doctor (Becker et al., 2003). Although we do not know what made this treatment the least helpful, given data that Latinos underutilize mental health care (U.S. Department of Health and Human Services, 2001), primary care physicians may be the first line of defense against eating disorders; thus, it is important that they are cognizant of the signs and symptoms of eating disorders in this population.

Turning to barriers to seeking or receiving treatment, cost of services was rated as the most influential barrier. Although not unique to Latinas seeking eating disorder treatment (Evans et al., 2011; Hepworth & Paxton, 2007), there is evidence to suggest that it is a potent factor in treatment utilization among this group (Cachelin et al., 2001; U.S. Department of Health and Human Services, 2001). Concerns about the cost of treatment reinforce the need to investigate the efficacy of group versus individual therapy for Latinas with binge eating disorder or bulimia nervosa, as group therapy is less expensive than individual therapy. Furthermore, pair-wise comparisons revealed that cost of services and eating disorder shame were significantly more influential barriers to treatment utilization than eating disorder stigma, mental health stigma and

shame, lack of referral, language barriers, and lack of health insurance. The finding related to eating disorder shame as a barrier is consistent with previous findings (Reyes-Rodríguez et al., 2013). The finding related to language barriers not being influential in treatment utilization is understandable given our recruitment primarily from 2- and 4-year colleges: enrollment in these colleges requires some level of English fluency. In contrast, findings related to the low influence of eating disorder stigma, mental health stigma and shame, lack of health insurance and lack of referral on treatment utilization are contrary to our hypotheses and are incongruent with previous research (Becker et al., 2003; Cachelin et al., 2001; Calderon et al., 2007; Rastogi et al., 2012; U.S. Department of Health and Human Services, 2001). These findings should be replicated with a larger and more diverse sample with regards to acculturation and socioeconomic status.

Our last analysis as part of the treatment-focused aim involved investigating correlations between treatment experiences and culturally-specific factors. The only significant correlation was a positive correlation between dominant society immersion and the mean helpfulness of all treatments. This corresponds to previous research that has found a relationship between acculturation and mental health care treatment utilization (Cachelin et al., 2000). Perhaps Latinas who are more acculturated find their treatment to be more helpful because they are less suspicious of mental health care providers and more likely to see the utility of mental health care treatment (Coleman, Wampold, & Casali, 1995; Pomaes & Williams, 1989). It was surprising that there was not a significant negative correlation between ethnic society immersion and the mean helpfulness of treatments, especially since there was a significant negative correlation between dominant and ethnic society immersion. Perhaps with a larger sample, or one in which there is more variation in ethnic society immersion (e.g., monolingual Spanish Latinas, Latinas from a community sample), we would have found significant results in the opposite direction.

Aim 2: To Test Mechanistic Models Involving Binge Eating, Disordered Eating, Body Dissatisfaction, and Culturally-Specific Factors

Model 1: Escape theory models. Results from the escape theory mechanistic model involving the individual factor of acculturative stress and the model involving the family factor of family disconnection revealed that negative affect mediated the acculturative stress/binge eating relationship and the family disconnection/binge eating relationship. The acculturative stress/binge eating relationship was such that more acculturative stress led to more negative affect, which then led to more binge eating. This mediated effect is consistent with previous literature that supports a positive relationship between acculturative stress and depression among Latinos (Crockett et al., 2007; Driscoll & Torres, 2013; Torres, 2010), as well as a positive association between negative affect and binge eating (Azarbad, Corsica, Hall, & Hood, 2010; Elliott, Tanofsky-Kraff, & Mirza, 2013; Fitzgibbon et al., 1998). The mediated effect involving family disconnection indicated that more family disconnection led to more negative affect, which then led to more binge eating; family disconnection has been found to be related to increased negative affect among Latinos (Hodson et al., 2006).

In the escape theory mediation model involving the environmental factor of discriminatory stress, we found a significant direct effect of discriminatory stress on increased binge eating. This is the first study to investigate and find a significant causal relationship between stress from discrimination experiences and binge eating among Latinas, and is consistent with our hypotheses as well as past work among African American women (Harrington et al., 2006). The effect of discriminatory stress on binge eating was mediated by negative affect. The relationship was such that more discriminatory stress led to more negative affect. More negative affect then led to more binge eating. The effect of discriminatory stress on negative affect has been demonstrated in other samples (Torres & Ong, 2010). Taken together,

results from our escape theory models point to the importance of incorporating the culturally-specific factors of acculturative stress, family disconnection, and discriminatory stress into models of binge eating for Latinas.

Model 2: Sociocultural models. In the sociocultural models involving acculturative stress, acculturative stress was associated with both more disordered eating and more body dissatisfaction. Thin-ideal internalization mediated the acculturative stress/disordered eating and acculturative stress/body dissatisfaction relationships. These relationships were such that more acculturative stress led to more thin-ideal internalization; more thin-ideal internalization then led to more disordered eating and body dissatisfaction. These findings are consistent with our hypotheses, as well as past work which supports the links between acculturative stress and thin-ideal internalization (Menon & Harter, 2012), thin-ideal internalization and disordered eating (Austin & Smith, 2008; Warren et al., 2010), thin-ideal internalization and body dissatisfaction (Austin & Smith, 2008; Poloskov & Tracey, 2013; Warren et al., 2005), and acculturative stress and disordered eating (Gordon et al., 2010; Kroon Van Diest et al., 2014; Perez et al., 2002). To our knowledge, this is the first study to find a significant association between acculturative stress and body dissatisfaction. It is important to recognize that these relationships only accounted for 37.9% of the variance in disordered eating and 53.0% of the variance in body dissatisfaction. There are likely other mediators that explain the links between acculturative stress and disordered eating and body dissatisfaction. Possible additional mediators to investigate may be negative affect, loneliness, discrimination, or family conflict related to acculturation (e.g., if children are more acculturated than their parents).

Interestingly, acculturation was significantly related to disordered eating and body dissatisfaction such that those who were more acculturated (i.e., more immersed in dominant

Caucasian society) engaged in less disordered eating and experienced less body dissatisfaction; this contrasts with previous findings (Alegria et al., 2007; Cachelin et al., 2006; Pepper & Ruiz, 2007; Poloskov & Tracey, 2013). As one example, Alegria and colleagues (2007) found that more time spent in the U.S. was significantly related to lifetime bulimia nervosa. However, this study by Alegria and colleagues (2007) used one index of acculturation and did not find support linking lifetime bulimia nervosa to another measure of acculturation (i.e., number of parents born in the U.S.). Thus, perhaps being more immersed in dominant society is protective for some Latinas. Being more acculturated may be protective because it indicates that one has largely moved past acculturative stress and thus feels a stronger sense of belonging to the U.S. This may then decrease some of the motivation to engage in disordered eating. Indeed, we found that acculturation was inversely related to acculturative stress; that is, women who were more acculturated experienced less acculturative stress in our study. Moderators of the acculturation/disordered eating and acculturation/body dissatisfaction relationships should be identified to investigate whether greater immersion in dominant society *always* leads to less disordered eating and less body dissatisfaction, or whether there are factors that impact these relations.

Neither of the mediation models involving acculturation was significantly mediated due to the lack of a significant relationship between acculturation and thin-ideal internalization. This contrasts with previous research, in which higher acculturation was associated with more thin-ideal internalization (Poloskov & Tracey, 2013). In the aforementioned study, however, participants were all Mexican or Mexican American women. Perhaps by combining various ethnicities in our study, we missed important inter-group variability. Future work should continue to investigate the acculturation/thin-ideal internalization association, focusing on

studying separate ethnicities. These types of analyses may be especially important given that certain Latin cultures (e.g., Argentina, Brazil) portray very thin women in their media (Forbes et al., 2012). Thus, depending on one's culture of origin, acculturating to U.S. culture may not be as detrimental if women have been exposed to thin images and expectations throughout their lives.

Exploratory Aim: To Identify Factors that may Differentiate Those who Endorsed Having an Eating Disorder Versus Those who did not, Despite Both Groups Meeting Full Diagnostic Criteria for an Eating Disorder

Results largely confirmed our hypotheses: those who denied an eating disorder history despite meeting full diagnostic criteria engaged in fewer compensatory behaviors, had lower EAT-26 scores, were less likely to have experienced anorexia nervosa or bulimia nervosa, and had less mental health treatment stigma tolerance than participants who endorsed an eating disorder history. There were no differences between the two groups in current BMI or binge eating frequency. Although we predicted that the group that endorsed an eating disorder history would have a lower BMI, this was not found. We only analyzed participants' current BMI—perhaps we would have found a significant difference if we had analyzed participants' lowest lifetime weight.

Overall, our results indicate that Latinas who experienced binge eating disorder or eating disorder not otherwise specified may have been unaware of or unwilling to acknowledge their eating disorders. As mentioned previously, binge eating may be normative to an extent in Latin cultures largely due to the cultural emphasis on food (Lindberg & Stevens, 2011; Shea et al., 2012). Furthermore, Latinos (especially if less acculturated or from older generations) tend to have a poor understanding of eating disorders in general (Shea et al., 2012), making it difficult for sufferers to recognize their disorder and gain support from family members regarding treatment.

This study aim reinforces the importance of psychoeducation among individuals, community, and family members (Reyes-Rodríguez et al., 2013; Smart et al., 2011). As mentioned previously, many Latinas feel isolated when suffering from eating disorders, compounded by the lack of awareness about eating disorder prevalence among this population. Innovative strategies such as the use of *fotonovelas* to alert the Latino community to the presence of mental health concerns have been found to reduce stigma around depression (Cabassa, Contreras, Aragón, Molina, & Baron, 2011); a similar approach could be used for eating disorders. Based on our findings, psychoeducation should focus on reducing stigma related to mental health treatment and educating Latinos about less known eating disorders (i.e., binge eating disorder, eating disorder not otherwise specified). Including family members in treatment to promote psychoeducation around the eating disorder may also help reduce stigma and increase support (Reyes-Rodríguez et al., 2014; Smart et al., 2011).

Strengths and Limitations

There are a number of strengths of this study. Firstly, this is, to our knowledge, the first study to investigate treatment experiences among Latinas as well as correlates of eating disorder recognition and identification. Secondly, we recruited women from across the country; thus, we are able to generalize our findings to young adult women nationwide. Thirdly, our study was conducted online, which may have enhanced response rates. As Latinas are fearful of mental health and eating disorder stigma (Cachelin et al., 2001; Rastogi et al., 2012; Reyes-Rodríguez et al., 2013), allowing them to participate via a largely anonymous modality may have encouraged more and honest responding.

As with any study, this study also had limitations. Although we recruited women nationwide, participation was restricted to 18-25 year olds. Binge eating and bulimia nervosa

occur across the lifespan and we are unable to generalize our findings to those who are younger or older than our sample. Additionally, our survey was only conducted in English. Latinas who were not fluent in English or who did not have a high enough proficiency with the language were thus unable to participate. Ability to speak English fluently has been used as a proxy for acculturation (Alegria, 2009); thus, by only allowing Latinas with this high language proficiency to participate, we likely had restricted ranges in terms of acculturation and acculturative stress. Further, it should be noted that the number of mediation models tested (three measuring Escape Theory and four measuring Sociocultural Models) increases the chance of Type I error and could lead to misinterpretation of results. However, our analytic approach (i.e., estimating indirect effects via the method outlined by Preacher & Hayes; 2004) reduces overall Type I error, when compared to that of Baron and Kenny (1986). Lastly, testing mediation in a cross-sectional sample tempers conclusions about causality. For instance, in the case of family disconnectedness, perhaps an individual is struggling with depression (negative affect), and the negative affect is leading to both family disconnectedness and more binge eating. Thus, the causal agent is negative affect and not family disconnection. Without longitudinal data, we are only able to imply causation through the mechanistic model; as a result, conclusions related to causality should be interpreted with caution.

Future Directions

This study sets the stage for many future directions. Recruiting a larger and more representative sample of Latinas in the U.S. would allow for greater variability in the culturally-specific factors. The constructs in this study should be investigated among specific cultures (e.g., Mexicans, Brazilians) living in the U.S. As mentioned above, Latin American countries have unique media, attitudes toward plastic surgery, body ideals, languages, and dialects that may

contribute to differences in disordered eating motivation and engagement. Research should focus on the ways in which the study constructs (e.g., acculturation, acculturative stress, binge eating) contribute to disordered eating among specific Latin groups. Further, we recruited participants primarily through 2- and 4-year colleges. This likely limited our ranges in terms of the culturally-specific factors we were investigating. Future work should collect data from community samples and conduct surveys in Spanish and Portuguese in order to have a more representative sample.

In terms of our mediation models, we tested several mediators that could explain engagement in disordered eating among Latinas. Other models should include such constructs as ethnic identity, religiosity, and family pressures to be thin, given the importance of these factors in Latin culture. Additionally, although we implied causal relationships via our mediation models, evaluating escape theory as it relates to discrimination and negative affect would be better studied with ecological momentary assessment (EMA) methods, given the temporal and fleeting nature of emotional states and the issues with retrospective recall bias (Shiffman, Stone, & Hufford, 2008). Conducting an EMA would be a more precise way to gather data related to escape theory and negative affect—by seeing how participants are feeling in the moment, right before a binge eating episode, we would be able to identify precursors to binge eating more accurately. For example, one may find that pressure to assimilate, a family argument, or a stressful discrimination experience predicts binge eating. This knowledge could then be applied to identify proximal versus distal predictors of binge eating, as well as which predictor is most potent.

Lastly, our findings related to Latinas not identifying as having had an eating disorder but meeting full diagnostic criteria points to: a) a mismatch between diagnostic criteria developed from a largely Western framework and Latinas' experience or expression of eating disorder

symptoms and/or b) stigma associated with eating disorders or mental health concerns that encourage participants to downplay or ignore disordered eating symptoms. Additional work should be done to disentangle these two possibilities and to investigate whether diagnostic criteria largely developed in Western populations applies to Latinas.

Clinical Implications

In terms of clinical implications, our findings related to treatment experiences elucidate both potentially efficacious and inefficacious treatments. Group therapy was rated as the most helpful treatment of those that we provided. This information, coupled with our finding that cost of services was the most influential barrier to treatment, suggests that group therapy may be a viable option for treating Latinas with eating disorders. Given our findings and those from previous studies, mental health stigma and shame are high in this population (Reyes-Rodríguez et al., 2013). Group therapy could be a way in which clients feel less isolated in their disorder. It will also be important to reduce stigma and shame and enhance knowledge related to eating disorders and their prevalence in the Latina population. This tact may encourage women to seek treatment for their eating disorders and to recognize eating pathology in themselves and others.

In terms of treatment, incorporating family members into treatment will likely be important, especially given our findings related to family disconnection in the escape theory model. Reyes-Rodríguez and colleagues (2014) have introduced a culturally enhanced version of cognitive behavioral therapy for bulimia nervosa for Latinos that has shown preliminary efficacy. This intervention includes core Latin values such as familism, personalism, and fatalism, and clients are required to include a family member in treatment. Assuming more research is done supporting its efficacy, this culturally enhanced intervention may lead to increased rates of recovery among Latinas suffering from bulimia nervosa.

Our mechanistic models point to the importance of targeting acculturative stress, family disconnection, discriminatory stress, and negative affect in treatment with Latinas who binge eat. CBT could be utilized to challenge the client's thoughts related to stressful events, and problem-solving with the therapist about how best to handle stressful acculturation, family, or discriminatory incidents may prove helpful. Additionally, building up the client's repertoire of additional coping strategies (outside of binge eating) could disrupt the cyclical relationship between these stressors, negative affect, and binge eating. Furthermore, targeting acculturation and acculturative stress in therapy could help break the bonds between these constructs and disordered eating, body dissatisfaction, and (in the case of acculturative stress) thin-ideal internalization.

Conclusion

In conclusion, this study sheds light on a greatly understudied population in the eating disorder literature. Through this work, we were able to gather data related to treatment experiences and mental health treatment disparities. Furthermore, we uncovered promising relations via our mechanistic models that help to disentangle pathways to binge eating, disordered eating, and body dissatisfaction. Lastly, in our sample of women who met criteria for a lifetime eating disorder, we identified factors that distinguished those who endorsed an eating disorder history from those who denied one. Results from this study indicate that Latinas do indeed suffer from eating disorders and that there is still a good deal of research that needs to be done to understand the best ways to serve this population and increase eventual recovery rates.

APPENDIX 1: TABLE 1

Percentiles Endorsing Different Eating Disorder Treatment Experiences and Mean Helpfulness of These Types of Eating Disorder Treatments

Type of Treatment	Number of Participants who engaged in treatment	Average helpfulness of treatment
Sought some type of treatment	28 (65.12%)	N/A
Did not seek treatment	15 (34.88%)	N/A
Physician	16 (57.14%)	2.75 (1.34)
Psychologist/therapist for individual therapy	19 (67.86%)	3.63 (1.21)
Psychologist/therapist for family or couples therapy	7 (25.00%)	3.86 (1.07)
Psychologist/therapist for group therapy	8 (28.57%)	4.25 (1.17)
Nutritionist/dietician	19 (67.86%)	3.00 (1.60)
Psychiatrist	13 (46.43%)	3.62 (1.19)
Other (i.e., other health care professional or other non-family person you sought help from for an eating disorder)	5 (17.86%)	4.80 (.45)
Residential treatment	5 (17.86%)	4.00 (.71)
Hospitalization	5 (17.86%)	4.20 (.84)
Partial hospitalization	5 (17.86%)	3.00 (2.00)
Intensive outpatient program	7 (25.00%)	3.86 (.90)
Any other treatment you have received for an eating disorder, whether or not it was led by a health care professional?	3 (10.71%)	4.67 (.58)

Note. $n = 43$. Among those who engaged in some type of treatment, the percentage listed indicates the percentage of those who sought that type of treatment out of the total number of participants who sought treatment ($n = 28$).

APPENDIX 2: TABLE 2

Average Influence of Barriers on Seeking or Receiving Treatment and Results from the Bonferroni Tests for Pair-Wise Comparison

Type of barrier to seeking or receiving treatment	Average barrier to treatment	Significantly different from other barriers
Eating disorder stigma	3.32 (1.37)	> Language barriers ($p < .001$)
Eating disorder shame	3.37 (1.39)	> Lack of referral ($p = .046$) > Language barriers ($p < .001$) > Lack of health insurance ($p = .035$)
Mental health stigma	3.15 (1.53)	> Language barriers ($p < .001$)
Mental health shame	3.29 (1.54)	> Language barriers ($p < .001$)
Lack of referral	2.38 (1.23)	< Eating disorder shame ($p = .046$) < Cost of treatment ($p = .027$) > Language barriers ($p = .012$)
Not knowing where to get treatment	2.69 (1.41)	> Language barriers ($p < .001$)
Cost of treatment	3.40 (1.45)	> Lack of referral ($p = .027$) > Language barriers ($p < .001$) > Lack of health insurance ($p = .021$)
Language barriers	1.29 (.77)	< All other barriers, all $ps < .016$
Lack of health insurance	2.36 (1.59)	< Eating disorder shame ($p = .035$) < Cost of treatment ($p = .021$) > Language barriers ($p = .016$)

Note. $n = 42$. For parsimony, only significant and marginally significant pair-wise comparisons are shown.

APPENDIX 3: TABLE 3

Means, Standard Deviations, and Correlations Among Treatment Experiences and Culturally-Specific Factors for Participants who Endorsed Having had an Eating Disorder

	<i>M (SD)</i>	1	2	3	4	5
1. Number of treatment experiences	2.60 (2.98)	-				
2. Mean helpfulness of all treatment experiences	3.59 (.99)	-.05	-			
3. Mental health treatment stigma tolerance	7.51 (3.65)	-.09	-.02	-		
4. Acculturation (Dominant Society Immersion Scale)	3.45 (.39)	-.17	.43*	.08	-	
5. Acculturation (Ethnic Society Immersion Scale)	3.03 (.65)	.25	.16	-.19	-.32*	-

Note. $n = 43$. * $p < .05$.

APPENDIX 4: TABLE 4

Means, Standard Deviations, and Correlations Among Constructs for Model 1: Escape Theory Models

	<i>M (SD)</i>	1	2	3	4	5
6. Acculturative stress	43.73 (21.69)	-				
7. Family disconnection	17.59 (4.17)	-.51***	-			
8. Discriminatory stress	41.53 (22.97)	.66***	-.37***	-		
9. Negative affect	40.57 (12.60)	.42***	-.46***	.27**	-	
10. Binge eating	2.68 (4.57)	.22*	-.14	.34***	.38***	-

Note. * $p < .05$. ** $p < .01$. *** $p < .001$.

APPENDIX 5: TABLE 5

Means, Standard Deviations, and Correlations Among Constructs for Model 2: Sociocultural Models

	<i>M (SD)</i>	1	2	3	4	5
11. Acculturation	3.49 (.40)	-				
12. Acculturative stress	43.73 (21.69)	-.31**	-			
13. Thin-ideal internalization	3.45 (1.05)	.08	.19*	-		
14. Disordered eating	14.34 (13.79)	-.23*	.27**	.60***	-	
15. Weight/shape concern	3.34 (1.81)	-.11	.32***	.70***	.74***	-

Note. Acculturation = Dominant society immersion scale of the Stephenson Multigroup Acculturation Scale. Disordered eating = Eating Attitudes Test-26. Binge eating refers to the number of episodes of binge eating in the past 28 days. * $p < .05$. ** $p < .01$. *** $p < .001$.

APPENDIX 6: Table 6

Chi-Square Analysis with the Presence/Absence of Meeting Lifetime Diagnostic Criteria for Anorexia Nervosa or Bulimia Nervosa Compared Across Report of Eating Disorder History Groups

		Have you ever had an eating disorder?			Chi-square statistic
		Yes	No	Total	
Dichotomous variable: Met lifetime diagnostic criteria for AN or BN?	No	4	12	16	$\chi^2 (1, N = 77) =$ 6.47, $p = .011$
		37	24	61	
	Yes				
Total		41	36	77	

Note. “Yes” to “Met lifetime diagnostic criteria for AN or BN?” refers to endorsing a lifetime history of anorexia nervosa or bulimia nervosa. “No” to this item means endorsing binge eating disorder or eating disorder not otherwise specified lifetime, but not anorexia nervosa or bulimia nervosa.

APPENDIX 7: FIGURE 4

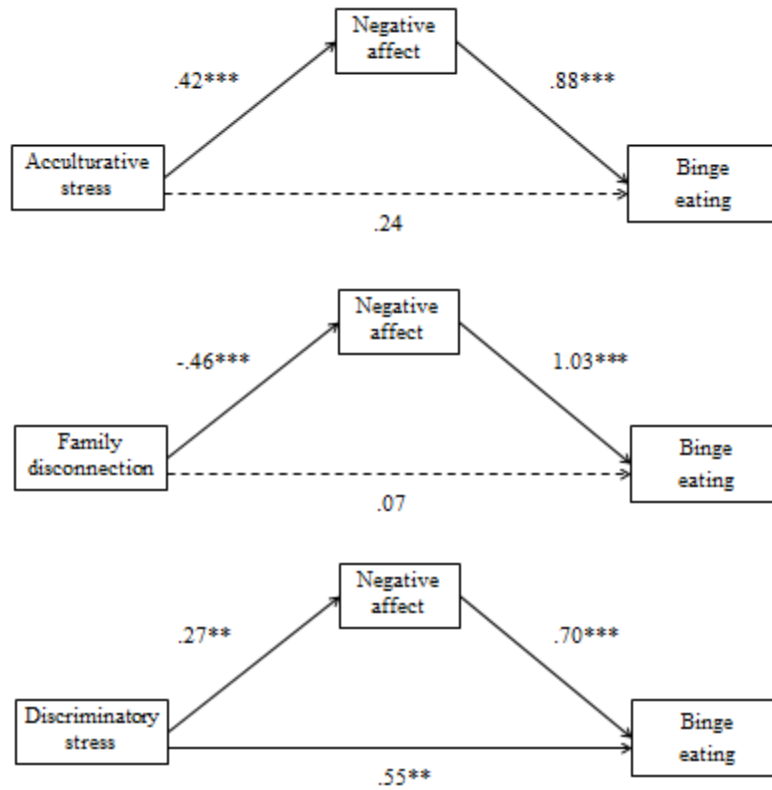


Figure 4. Mediation models testing the escape theory of binge eating using acculturative stress, family disconnection, discriminatory stress, and negative affect. Standardized path coefficients are presented for all variables. Solid lines indicate significant pathways. ** $p < .01$. *** $p < .001$.

APPENDIX 8: FIGURE 5

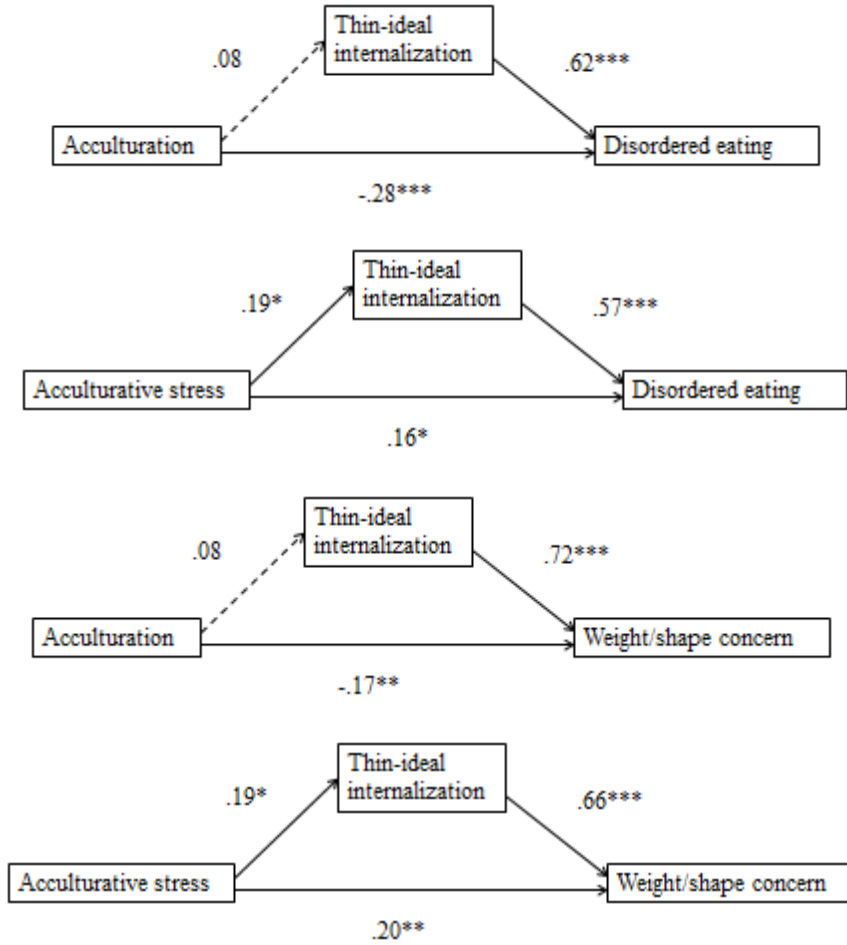


Figure 5. Sociocultural mediation models testing acculturation and acculturative stress as independent variables, thin-ideal internalization as a mediator, and disordered eating and weight/shape concern as dependent variables. Standardized path coefficients are presented for all variables. Solid lines indicate significant pathways. * $p < .05$. ** $p < .01$. *** $p < .001$.

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